Draft
September 29, 2000

HETCH HETCHY WATER TREATMENT PROJECT CHLORAMINE CONVERSION

Environmental Impact Report

Summary of Comments and Responses

San Francisco Planning Department File No. 1999.[illegible]

State Clearinghouse No. 199912090

Draft EIR Publication Date: June 3, 2000
Draft EIR Public Hearing Date: July 11, 2000 in San Mateo
July 12, 2000 in Pleasanton
July 13, 2000 in San Francisco
Draft EIR Public Comment Period: June 3, 2000 through July 19, 2000
EIR Certification Date: October 19, 2000

City and County of San Francisco
San Francisco Planning Department

SAN FRANCISCO
PUBLIC LIBRARY

REFERENCE
BOOK

Not to be taken from the Library

PLANNING DEPARTMENT

City and County of San Francisco 1660 Mission Street, Suite 500 San Francisco, CA 94103-2414

(415) 558-6378 PLANNING COMMISSION FAX: 558-6409 ADMINISTRATION FAX: 558-6426 CURRENT PLANNING/ZONING FAX: 558-6409 LONG RANGE PLANNING FAX: 558-6426

MEMORANDUM

DATE: October 3, 2000

TO: Recipients of Hetch Hetchy Water Treatment Chloramine Conversion Project Draft Summary of Comments and Responses

FROM: Gerald G. Green, Director of Planning
BY: Paul Deutsch, OER, Hetch Hetchy Water Treatment Chloramine Conversion Project EIR Coordinator
THROUGH: Hillary E. Gitelman, Environmental Review Officer

RE: Hetch Hetchy Water Treatment Chloramine Conversion Project Environmental Impact Report

A copy of the Hetch Hetchy Water Treatment Chloramine Conversion Project Draft Summary of Comments and Responses has been sent to you under separate cover. Together with the Draft Environmental Impact Report published June 3, 2000, these documents comprise the Final Environmental Impact Report (FEIR) for the Hetch Hetchy Water Treatment Chloramine Conversion Project, which the Planning Commission will be asked to certify as adequate under CEQA at their hearing scheduled for October 19, 2000.

Once the FEIR is certified, the Hetch Hetchy Water Treatment Chloramine Conversion Project and implementing actions can be considered for approval by the SFPUC. Pursuant to CEQA, each decision-maker that approves any such action must make findings that the FEIR has been reviewed and considered, and that the project has incorporated feasible ways identified in the FEIR to reduce or eliminate any significant effects on the environment that the project could cause. If unavoidable significant effects on the environment remain, the decision-makers nonetheless may find that specific overriding considerations warrant approval of the project. A draft of these CEQA Findings is one of the documents that will be received by the SFPUC in conjunction with its actions on the project. The Findings will include a Mitigation Monitoring and Reporting Program that lists all the mitigation measures that are being recommended for adoption, along with the schedule, mitigation responsibility, monitoring responsibility, and monitoring actions that will ensure their implementation.

If you have any questions about the FEIR or the CEQA process for this project, please call Paul Deutsch at (415) 558-5965. If you have questions about the Hetch Hetchy Water Treatment Chloramine Conversion Project, please call Patty Mallett at (415) 554-8994.

THE PLANNING DEPARTMENT
1660 MISSION STREET, SUITE 500
SAN FRANCISCO, CALIFORNIA 94103-2414

RETURN POSTAGE GUARANTEED

Kenneth Dowlin
Library Director
San Francisco Main Library
Civic Center
San Francisco, CA 94102
DD

GIC

POSTMASTER: THIS PARCEL MAY BE OPENED FOR POSTAL INSPECTION IF NECESSARY

94102/3344

Draft
September 29, 2000

HETCH HETCHY WATER TREATMENT PROJECT CHLORAMINE CONVERSION

Environmental Impact Report

Summary of Comments and Responses

San Francisco Planning Department File No. 1998.898E
State Clearinghouse No. 199912090

Draft EIR Publication Date: June 3, 2000
Draft EIR Public Hearing Date: July 11, 2000 in San Mateo
July 12, 2000 in Pleasanton
July 13, 2000 in San Francisco
Draft EIR Public Comment Period: June 3, 2000 through July 19, 2000
EIR Certification Date: October 19, 2000

City and County of San Francisco
San Francisco Planning Department

TABLE OF CONTENTS

HETCH HETCHY WATER TREATMENT PROJECT-- CHLORAMINE CONVERSION EIR DRAFT SUMMARY OF COMMENTS AND RESPONSES

LIST OF FIGURES

LIST OF TABLES

CHAPTER I
INTRODUCTION

This document contains public comments received on the Draft Environmental Impact Report (Draft EIR, or DEIR) prepared for the San Francisco Public Utilities Commission (SFPUC) Hetch Hetchy Water Treatment Project--Chloramine Conversion, and responses to those comments. The DEIR analyzed the physical environmental effects of the conversion of the residual disinfectant for the water supply from chlorine to chloramine (a combination of chlorine and ammonia) and of the associated facilities.

Following this introduction, Chapter II contains a list of all persons and organizations who submitted written comments on the Draft EIR and who testified at the public hearings on the Draft EIR held on July 11, 2000 in San Mateo, July 12, 2000 in Pleasanton, and July 13, 2000 in San Francisco. Following the list of commentors, Chapter II also presents responses to the comments, organized by comment topic area. Each substantive comment on the EIR is recorded in Chapter II, and the response to each comment is presented immediately after that comment. Duplicative or substantially similar comments are grouped together, with a single response. Some comments do not pertain to physical environmental issues, but responses are included to provide additional information for use by decision-makers.

These comments and responses will be incorporated into the Final EIR as a new chapter. Text changes resulting from comments and responses will also be incorporated in the Final EIR, as indicated in the responses. Where the response calls for revision to the Draft EIR, the text is indented; new text is shown in boldface type and deleted text is shown as strikethrough text.

CHAPTER II
SUMMARY OF COMMENTS AND RESPONSES

The following is a list of all persons and organizations who submitted written comments on the Draft EIR and who testified at the public hearings on the Draft EIR held on July 11, 2000 in San Mateo, July 12, 2000 in Pleasanton, and July 13, 2000 in San Francisco.

Federal Agencies

United States Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Southwest Region, James R. Bybee, Protected Habitat Manager, Northern California, July 17, 2000 (Comments F-1, F-2, G-11, G-12)

United States Department of the Interior, National Park Service, Golden Gate National Recreation Area, Brian O'Neill, General Superintendent, July 19, 2000 (Comments A-3, B-4, B-6, B-11, B-12, D-3, D-4, D-5, E-1, F-3, F-5, F-8, F-9, F-10, F-12, F-13, F-14, F-15, F-16, F-17, F-18, G-2, G-5, G-6, G-7, G-8, G-9, G-10, G-13, G-24, I-1, I-4, J-1, J-2, K-1, K-2, L-1, M-1, N-2, O-1, P-1, P-2, P-3)

State Agencies

California Regional Water Quality Control Board, San Francisco Bay Region, Dale C. Bowyer, Senior Water Resources Engineer, July 18, 2000 (Comments B-2, B-3, B-5, B-7, B-8, B-9, C-1, C-2, C-3, F-6, F-7, G-3, G-4, G-14, G-15, G-16, G-17, G-18, G-19, G-20, G-21, G-22, G-23, G-25, G-26, G-27, G-28)

State of California Business, Transportation and Housing Agency, Department of Transportation, Jean C.R. Finney, District Branch Chief, July 11, 2000 (Comment Q-2)

Local Agencies

Alameda County Water District, Paul Piraino, General Manager, July 17, 2000 (Comments A-1, B-1, B-10, G-1)

City of San Mateo, Department of Community Development, Mary Gallagher, Chief of Planning, July 18, 2000 (Comments A-2, D-1, F-4, F-11, I-2, I-3)

City of Sunnyvale, Mark R. Dettle, Assistant Director of Public Works/City Engineer, July 14, 2000 (Comment Q-1)

County of San Mateo, Planning and Building Division, Jim Eggemeyer, Development Review Manager, July 18, 2000 (Comments D-2, N-1)

Private Individuals and Groups

Walter E. Goldstein, Ph.D., June 17, 2000 (Comments H-2, H-3, H-4)

San Mateo Public Meeting (July 11, 2000)

Walter Goldstein (Comments H-1, H-5)

Pleasanton Public Meeting (July 12, 2000)

There were no comments made at the public meeting held in Pleasanton.

San Francisco Public Meeting (July 13, 2000)

There were no comments made at the public meeting held in San Francisco.

A. BACKGROUND

Comment A-1: "ACWD first converted the Mission San Jose Water Treatment Plant to the use of chloramines to help minimize the formation of disinfection byproducts in the early 1980's. By mid-1998, all primary production sources were converted to the use of chloramines and all customers have received chloraminated water since that time. The last production facility to be converted, the 45-million gallons per day Blending Facility (which combines groundwater and SFPUC water) was designed in anticipation of the SFPUC's conversion project. We concur that the project constitutes an important step to improve upon the current disinfection practice and will achieve a greater measure of drinking water health protection for the 2.4 million customers that the SFPUC's water supply system ultimately serves." (Alameda County Water District)

Response: The information provided by the Alameda County Water District is noted. The SFPUC would utilize such information in their planning and public outreach efforts for the conversion to chloramine disinfection.

Comment A-2: "Program Level/Project EIR- The introduction in the EIR states that additional environmental review would be required to analyze those portions of the project where site-specific information is not available. Components of the project where additional review will be necessary should be clearly identified and potential impacts disclosed. If the full environmental impacts of the project are not yet known (due to lack of site-specific details) how can the determination be made that the project, as proposed, would not result in any significant environmental impacts? Questions regarding biological and aesthetic impacts on the Pulgas site require additional information and therefore it is imprudent to conclude that these impacts have been mitigated to a less-than-significant level with the mitigation identified." (City of San Mateo)

Response: The Draft EIR describes the difference between "project-level" and "program-level" analysis (see DEIR page II-3). A *project* level analysis was conducted on those project components where there is adequate site-specific information to determine the potential environmental effects associated with construction and operation of the project. This included all the major project components of the chloramine conversion project, as described on DEIR pages III-7 through III-35. The Draft EIR provides full disclosure of the potential impacts associated with these project components and recommends mitigation measures to reduce impacts to a less than significant level.

A *program* level analysis was conducted for those components with insufficient site and/or design information available; only the proposed dechlorination facilities at the secondary discharge locations and the modifications to the San Francisco City Distribution Division system and the Bay Area Water Users Association (BAWUA) member agencies' systems were analyzed at a program level, as described on DEIR pages III-35 through III-41. The Draft EIR provides a generic approach to environmental analysis of these components, all of which are at locations remote from the major project locations. On a program level, the Draft EIR determined that all potential impacts of these components can be mitigated to a less than significant level.

Planning, design, and construction of the major project components can proceed independently of the program-level components without significant environmental effects. If determined necessary by the San Francisco Planning Department or other applicable jurisdictions (for BAWUA agencies' systems), any subsequent environmental review for the components evaluated at a program level can be conducted independently of the major project components to eliminate or minimize any potential environmental effects at these other locations.

The Draft EIR analyzes potential environmental effects at the Pulgas site at a *project* level of detail, including biological and aesthetic impacts. The analysis is based on available conceptual design information, or where design information is unavailable, on maximum impact scenarios such as maximum envelope of disruption. Subsequent information to be developed during the design phase would fall within the parameters or restrictions provided under conceptual design or worst-case scenario. Therefore, there is sufficient information to conduct the project-level analysis of the Pulgas site in the Draft EIR. Although potentially significant biological and aesthetic impacts were identified at the Pulgas site, the Draft EIR presents mitigation measures that could reduce these impacts to less than significant.

Comment A-3: "Ensure that GGNRA and Presidio Trust are included in the formal outreach program." (United States Department of the Interior, National Park Service, Golden Gate National Recreation Area)

Response: As described on DEIR pages II-5 through II-6, the SFPUC will conduct a formal outreach program that includes all of its water customers. As one of the water customers, the Golden Gate National Recreation Area (GGNRA) and the Presidio Trust will be included in the outreach program. The formal public outreach program is scheduled to begin one year prior to actual conversion.

B. PROJECT DESCRIPTION

1.0 CHEMICAL DESIGN COMMENTS

Comment B-1: "2. The SFPUC should make chemical dosage and disinfectant residual data available in real-time to retail agencies that need such information. It is particularly important to provide advanced notification of significant changes in dosages so that operational adjustments are properly made by those agencies blending water and/or providing supplemental disinfection." (Alameda County Water District)

Response: The SFPUC is in the process of implementing a new System Controls and Data Acquisition (SCADA) system for monitoring and operation of all SFPUC facilities. This SCADA system will expand on the existing SCADA capabilities currently available at the SFPUC water treatment plants. The new SCADA project does not include the addition of treatment plant chemical dose data; this data is managed by the SCADA systems already in place at the water treatment plants.

The SCADA project will add new monitoring points and/or monitoring parameters upstream of the Alameda County Water District (ACWD) turnout. Monitoring locations include Tesla Portal, Alameda East Portal, Alameda West Portal, Irvington Portal, and the ACWD turnout in Fremont. Parameters that may be monitored at some of these locations include chlorine residual (total chlorine will be measured after the conversion to chloramine), pH, turbidity, and temperature.

The SFPUC will have "near-time" data available to all BAWUA customers (ACWD is a BAWUA member agency). Real-time data, including but not limited to disinfectant residual, can be provided to individual customers on a case-by-case basis, as agreed upon by both the SFPUC and the customer. However, routine provision of real-time chemical dose information is not planned for BAWUA customers. The SFPUC and the City of Milpitas are currently drafting an Memorandum of Understanding (MOU) regarding the sharing of real-time information. This MOU can serve as a model for developing similar agreements between the SFPUC and other BAWUA customers on a case-specific basis.

Comment B-2: "This would be accomplished by adding ammonia and additional chlorine (as needed) to chlorinated water in the PUCs pipelines so as to maintain a chloramine to ammonia ratio of about 5:1 (it is unclear whether this is a molar or weight ratio)." (California Regional Water Quality Control Board)

Response: Under the chloramine conversion project, the SFPUC is proposing to maintain a chlorine to ammonia ratio of about five to one on a mass basis, as described on DEIR page III-4.

Comment B-3: "At points where PUC water is discharged, all chlorine would be removed prior to any discharge. Ammonia concentrations would be reduced prior to discharge at some, but not all locations. At points where ammonia was to be removed, the water would first be acidified, then superchlorinated to remove ammonia in the form of nitrogen gas. In all cases, chlorine

would be removed by adding a dechlorinating agent such as sodium bisulfite." (California Regional Water Quality Control Board)

Response: The commentor is correct in summarizing the proposed chemical processes, which are described on Draft EIR pages III-3 through III-7.

Comment B-4: "The project description does not state the preferred method of dechloramination, contractor basin or piping, including information on the environmentally preferable alternative. The selection criteria and advantages and disadvantages of each alternative should be outlined in the table." (United States Department of the Interior, National Park Service, Golden Gate National Recreation Area)

Response: The commentor is correct in stating that it has not yet been determined whether to construct a contactor basin or contactor pipeline at the proposed Pulgas dechloramination facility, as described on Draft EIR page III-25. At this preliminary design stage, the detailed engineering advantages and disadvantages of the two methods have not yet been identified, and the information for the requested table has not been developed. However, there is sufficient information in the conceptual design report about either system for environmental review purposes. Thus, the EIR analyzes the potential environmental effects of both systems, which would be similar, as either system would require a similar area of disturbance. The determination of the dechloramination method would be made during the design stage following EIR certification and project approval.

2.0 CONSTRUCTION IMPACTS

Comment B-5: "Construction: To carry out the conversion, the SFPUC would construct chloramination and dechloramination facilities, chemical storage facilities, pipelines, and access roads. This construction would require disturbing a total of 12.3-13.3 acres of land belonging to the City and County (C and C) of San Francisco. The construction and use of these facilities might impact jurisdictional wetlands and/or state and federally protected species." (California Regional Water Quality Control Board)

Response: The commentor is correct in summarizing the proposed construction scenario of the project, which is described in more detail on Draft EIR pages III-41 through III-44. The DEIR describes the potential impacts to jurisdictional wetlands and/or state and federally protected species associated with this construction scenario on DEIR pages IV.C-22 through IV.C-33. Potential impacts identified in that section would be reduced to less than significant with mitigation measures described in DEIR Section V (see pages V-2 through V-10).

Comment B-6: "Table III-2, Note g. Borrow and disposal sites are not described or discussed in the document. An analysis of the impacts of stockpiling or spreading 32,000 cubic yards of material over 'undeveloped field or level areas in the project vicinity' should be included in the EIR." (United States Department of the Interior, National Park Service, Golden Gate National Recreation Area)

Response: Borrow and disposal sites have not been identified as part of the conceptual design process. The volumes of excavated material presented in Table III-2 of the Draft EIR (page III-42) are conservatively high estimates used for impact analysis purposes. The estimates would be refined during the design phase. However, the overall construction approach would be to balance the volume of excavated material with the volume of fill material needed during construction. Excess excavated material would be used to develop berms as part of the landscaping or spread over the undeveloped field adjacent to the south end of the proposed dechloramination site. This field is regularly disked and plowed as part of the SFPUC watershed maintenance practices, and no sensitive habitat or wetlands would be affected by use of the field for spread of excavated material. Construction of berms or spread of excess excavated material would require implementation of erosion control best management practices, as is required for construction of project facilities. See the response to Comments G-14 through G-16 in Section II.G of this document, which describes typical erosion control practices, such as stabilizing denuded areas and use of sediment barriers. The amount of soil hauled off site would be minimized, and at this time disposal sites have not been identified; selection of disposal sites is typically within the purview of the contractor.

3.0 FACILITY DESIGN DETAILS

Comment B-7: "The DEIR appears, for the most part, to include adequate design elements and control measures to prevent significant negative impacts to water quality and beneficial uses. Regional Water Quality Control Board (Board) staff have some concerns, however, about the mitigation measures to prevent releases of chloramines, chlorine, and the toxic form of ammonia. These measures are not described in sufficient detail to ensure that significant amounts of the above pollutants would not be discharged to surface waters. To address these concerns, The San Francisco Public Utilities District (SFPUC) should describe in greater detail:

- specific measures for preventing system failures,
- the methods used for reducing free residual chlorine concentration in discharges to well below 0.1 part per million (ppm), and
- the methods used to calculate the levels of toxic ammonia that would be discharged." (California Regional Water Quality Control Board)

Comment B-8: "Although the mitigation measures proposed above are thorough and laudable, they are not described in this DEIR in sufficient detail to guarantee that significant negative water quality impacts would be avoided. A discharge of chlorinated, chloraminated, and in particular, superchlorinated water could result in catastrophic impacts to the water quality and wildlife habitat beneficial uses of any receiving waters it might reach. In addition, such a discharge would constitute an exceedance of the SFPUC's discharge limitations, and could result in civil liability. In order to guarantee that the possibility of such a discharge is not significant, the DEIR should describe the specifics of the following mitigation measures:

- the project's 'uninterruptible power supply'
- The 'redundant design elements' to be incorporated into the project

- The dechlorination procedure(s) to be used at all possible points of discharge. Specifically, how will the SFPUC
  - ensure that all water is reduced to well below the 0.1 ppm free residual chlorine concentration that is known to be toxic to fish,
  - ensure the proper addition and mixing of dechlorinating compounds, and
  - ensure that all staff responsible for dechlorinating and monitoring discharged water would be adequately trained?" (California Regional Water Quality Control Board)

Comment B-9: "The DEIR should describe the specific project design measures that will reduce the possibility of a system failure and ensure proper dechlorination of discharge water" (California Regional Water Quality Control Board)

Response: The Draft EIR describes potential impacts to water quality associated with any inadvertent operational discharges of chlorinated, chloraminated, and superchlorinated water to surface waters (see pages IV.D-15 through IV.D-21). Provisions to prevent chlorinated water from entering surface waters include construction of permanent dechlorination facilities at potential discharge sites. Ammonia levels would be reduced at the Pulgas site to prevent excess ammonia from entering Crystal Springs Reservoir, and system back-ups and redundancy would be included to prevent superchlorinated discharges. Although specific facilities operations details would not be developed until the design phase, standard industry and state-of-the-art practices would be incorporated into the project design. Conceptual design indicates that the proposed facilities would include features that prevent discharge of chlorinated, chloraminated, and superchlorinated water to surface waters.

Although not specified explicitly in the Draft EIR, all of the chemical feed facilities would be equipped with appropriate analyzers and related instrumentation to monitor water quality parameters of concern, downstream of chemical injection points. Where appropriate, the system could measure in-line concentrations of chlorine, pH, and temperature, and instruments would be calibrated to meet applicable discharge standards. Signals and alarms from these analyzers and instruments are typically routed through a critical component of the chemical facilities' on-site computerized control systems, known as Programmable Logic Controller (PLC) systems. These analyzers and related instruments would provide process signals to the PLC system, which in turn, would translate those signals through a computer program, and deliver the corresponding control signal to the chemical feed system to adjust (i.e., increase or decrease) the chemical output as necessary. This is typically referred to as a closed-loop control scheme and is the most common method of controlling chemical feed systems and maintaining constant downstream water quality parameters. In summary, the standard control strategies used for disinfecting drinking water and for chemically removing chlorinous compounds in discharges are planned for these facilities.

The monitoring and control system would also be connected to the System Controls and Data Acquisition (SCADA) system, which would monitor the entire SFPUC water transmission and distribution system. Monitoring data would be transmitted to the nearest water treatment plant where there are operators 24 hours a day who could, if necessary, manually override or respond to alarms via the on-site PLC systems. The SCADA system would also include programmed target

set-point ranges for critical water quality parameters. Deviations from the "target range" would trigger computer and audible alarms to notify operations staff charged with responding to the alarms and taking the appropriate action.

The chemical feed and control systems for the proposed facilities would also include an appropriate level of redundancy to ensure continuous facility operation. This redundancy could include, but would not be limited to, back-up/standby chemical metering pumps, back-up water quality analyzers and instruments, back-up power supply (emergency generators for general power needs, and additional battery packs such as uninterruptible power supply, or UPS, system for analyzers/instruments). The control system would be designed such that failure of a critical component (such as a metering pump or residual analyzer) automatically triggers the start-up of the standby components (via SCADA). Although such automatic features would be incorporated into the control system, any equipment failure or deviation from established water quality targets would trigger computer and audible alarms that must be acknowledged by operations staff.

SFPUC staff would be properly trained to operate during routine and emergency periods for each facility. Each treatment facility would also have an "Operations Plan." Similar to the Operations Plans for existing water treatment plants, the plans for new facilities would describe the treatment system equipment components and layout, redundancy components, mode of operation, sampling/monitoring system, alarm system, operator duties, and alarm/emergency response and response protocols (including contact lists).

Comment B-10: "1. As a downstream user of water from Alameda Creek, ACWD should be contacted promptly by the SFPUC at the onset of any potentially significant overflow or chemical spill event from project facilities in the Sunol Valley (Alameda East, San Antonio Pump Station, and Alameda West). The SFPUC should commit to exchanging emergency contact lists with ACWD on a routine basis to ensure that names and phone numbers for emergency response personnel are kept current." (Alameda County Water District)

The SFPUC will develop notification procedures, in conjunction with ACWD, prior to implementation of the proposed project. As described on Draft EIR page IV.I-13, the proposed project includes secondary containment design provisions for both chemical storage facilities and chemical feed pipelines, in accordance with applicable regulations. If a chemical spill were to occur in secondary containment areas, the spillage would be pumped and disposed of, in accordance with applicable regulations. These design provisions would minimize any risk associated with the release of chemicals from project facilities. However, in the unlikely event of a chemical spill, the SFPUC would implement emergency response procedures that are part of the Hazardous Materials Business Plan required for each facility. The Hazardous Materials Business Plan specifies procedures for responding to a chemical spill and reporting the spill to the appropriate regulatory agencies. If a spill to drinking water were to occur, the SFPUC would be responsible for coordinating response actions and notifying the SFPUC Water Quality Division. The Water Quality Division would then notify the Department of Health Services. If there were a spill affecting water quality in Alameda Creek, the SFPUC would be responsible for notifying the Alameda County Department of Environmental Health, California Office of Emergency Services, Regional Water Quality Control Board, U.S. Environmental Protection Agency, California

Department of Fish and Game, U.S. Coast Guard, and Department of Toxic Substances Control, as appropriate.

Comment B-11: "The project description could provide greater detail of the proposed facility, including depth below grade for the 65,000 square foot contactor basin or the 10 to 12 foot diameter pipes." (United States Department of the Interior, National Park Service, Golden Gate National Recreation Area)

Response: The Draft EIR presents conceptual design information for the proposed facilities at a level of detail sufficient to conduct the environmental analysis of potential impacts. Details of the facilities would not be developed until the design phase, although as stated in the Draft EIR, it is estimated that excavation for the contactor pipeline could be 15 to 25 feet deep (see page III-43).

Comment B-12: "Table III-1: New Impervious Surfaces areas (30,000 sf and 3,200 sf) at Locations 3a and 4 are inconsistent with the numbers provided in the New Structures and New Roadways column. For site 3b., the 500 ft. 6" pipeline from the reservoir to the pump station should be included under Pipelines." (Brian O'Neill, United States Department of the Interior)

Response: The commentor is correct regarding errors in calculations of impervious surfaces shown on Table III-1. In response to this comment, DEIR page III-8, Table III-1, column "New Impervious Surfaces," line "3a. Pulgas Site, San Mateo County" has been revised:

20,000 + 4,000 +
5,000 + 6,000 =
~~30,000~~**35,000** square feet

Also in response to this comment, DEIR page III-9, Table III-1, column "New Impervious Surfaces," line "4. Harry W. Tracy WTP, San Mateo County" has been revised:

1,500 + 1,600 + ~~100~~
120 = ~~3,200~~
3,220 square feet

For Site 3b, Table III-1 does include 500 linear feet of 6-inch-diameter pipeline under the column "Pipelines," as requested by the commentor. No change to the DEIR is warranted.

C. PROJECT APPROVALS

Comment C-1: "As mentioned in the DEIR, because the entire project would disturb more than five acres of land during construction, it must be covered under the State NPDES General Permit for Discharges of Storm Water Associated with Construction Activity (General Permit). Although the individual sites may be less than 5 acres in size, they must still be covered under the General Permit. This permit can be obtained by filing a Notice of Intent with the State Water Resources Control Board, Division of Water Quality. The lead agency can obtain an NOI and the General Permit from the State Water Resources Control Board web page at www.swrcb.ca.gov. The project sponsor must propose and implement control measures that are consistent with the General Permit and with the recommendations and policies of the local agency and the Regional Board." (California Regional Water Quality Control Board)

Comment C-2: "The lead agency is required to obtain an NPDES General Permit covering all sites on which construction would occur." (California Regional Water Quality Control Board)

Response: The NPDES General Permit for storm water discharges associated with construction activity states that this permit applies to construction activity that results in soil disturbances of at least five acres of total land area. The intent of the NPDES regulation is to protect water quality from storm water generated at large (greater than five acres), contiguous construction sites. Although the proposed project involves multiple facility locations, construction of the individual facilities at each location is considered to be a separate construction area. As described in the Draft EIR, the project locations at Tesla, Sunol Valley, Pulgas area, and Harry W. Tracy WTP are situated in disparate geographic locations in different watersheds and counties. As shown in DEIR Table III-2, only the facilities at the Pulgas site would require a construction area greater than five acres (see page III-42); construction of the Pulgas dechloramination facility would require 9 to 10 acres of disturbance. The Tesla, Sunol Valley, and Harry W. Tracy WTP project locations would each be well under five acres in size. Although an NPDES permit is not required for these sites, the SFPUC would implement erosion control and other Best Management Practices to protect water quality, as described in the Draft EIR (see page IV.D-14). Construction of the various facilities would be subject to different contract specifications, as required for each site, and each contract would have site-specific storm water control provisions that comply with any applicable discharge requirements, with the General Permit provisions applicable only to the Pulgas site.

Comment C-3: "The lead agency is required to obtain 401 certification from the San Francisco and/or Central Valley Regional Boards for any alteration or fill of wetlands." (California Regional Water Quality Control Board)

Response: The comment regarding 401 certification requirements is noted. The SFPUC would comply with these regulations as applicable under the proposed project, as discussed in the Draft EIR (see page III-48).

D. PLANS AND POLICIES

Comment D-1: "Plans and Policies- The EIR includes a list of County of San Mateo policies applicable to the project. The EIR correctly states that non-conformance with these policies does not always constitute an environmental impact. However, the document does not discuss the project's conformance with these policies and is therefore deficient. Policies regarding habitat protection, vegetation removal, protection of scenic resources, etc. should be discussed in the context of the proposed project. A section of the project's general conformance with these plans and policies needs to be included in the document." (City of San Mateo)

Comment D-2: "2. Please note that Government Code Section 65402 requires the lead agency to obtain a General Plan conformity determination for the proposed project." (County of San Mateo)

Response: As described in the Draft EIR, the proposed project, located on lands owned by the City and County of San Francisco, is not subject to the planning and building laws of any other city or county in which those lands are located (see pages IV.A-1 through IV.A-10). The general plans and polices of San Joaquin County, Alameda County, and San Mateo County do not apply to this project. The referenced excerpts from the general plans of San Joaquin County, Alameda County, and San Mateo County and various regional plans are presented in the EIR for informational purposes only. Furthermore, determinations of general plan conformity are within the purview of decision-makers in those jurisdictions. With mitigation measures identified in DEIR Chapter V, no substantial conflict with various general plans and other environmental policies is foreseen. Following completion of this EIR, the SFPUC will submit a description of the project to decision-makers for their advisory determinations of general plan conformity. Therefore, it is not appropriate for the EIR to discuss conformity or to make conformity determinations of the proposed project with these plans. The following text changes to Draft EIR, Section IV.A, Plans and Policies, has been made to clarify this distinction.

DEIR page IV.A-2, paragraph 5:

San Joaquin County General Plan 2010

The *San Joaquin County General Plan 2010* was adopted in July 1992. It establishes land uses, plans, and policies for all unincorporated areas in the County. The plans and policies of the general plan ~~that could be applicable to the proposed project~~ are summarized below and are presented for informational purposes only.

DEIR page IV.A-4, paragraph 2:

East County Area Plan

Alameda County divides its general plan into geographic units; the San Antonio Pump Station site is included in the *East County Area Plan* (ECAP). The ECAP, adopted in May 1994, includes the cities of Dublin, Pleasanton, Livermore, and small portions of

Hayward. Plans and policies of the ECAP ~~that could apply to the proposed project~~ are summarized below and are presented for informational purposes only.

DEIR page IV.A-6, paragraph 3:

San Mateo County General Plan

The *San Mateo County General Plan* was adopted in November 1986. Plans and policies of the general plan ~~that could apply to the proposed project~~ are summarized below and are presented for informational purposes only.

DEIR page IV.A-9, paragraph 3:

San Mateo County General Plan

The plans and policies of the *San Mateo County General Plan* ~~that could be applicable to the Harry W. Tracy WTP site~~ are summarized below and are provided for informational purposes only.

Comment D-3: "Thank you for the opportunity to comment on the Environmental Impact Report (EIR) for the Hetch Hetchy Water Treatment Project Chloramine Conversion Project. In general, the EIR is well written and informative. In reviewing the EIR, the GGNRA focused on the San Francisco Watershed (SF Watershed) elements of the project, in particular the proposed work at the Pulgas site. The GGNRA has an interest in the SF Watershed because of the two easements it administers at the site. The easements articulate an intent that the land will be preserved in its natural condition to the maximum extent possible consistent with the water-related operations and activities of the City. The comments are not intended to question the need for the project, rather comments are provided in an effort to minimize potential impacts of SF Watershed lands and protect the interest of the GGNRA easements. National Park Service National Environmental Policy Act Guideline (NPS-12) states that comments should 'adequately describe practicable alternatives which are less damaging to NPS interests and concerns, and see that these are evaluated realistically and adopted where feasible.' " (United States Department of the Interior, National Park Service, Golden Gate National Recreation Area)

Response: In compliance with CEQA, this EIR describes a reasonable range of alternatives that would feasibly attain most of the basic objectives of the proposed project but would avoid or substantially lessen any of the significant environmental effects of the project. The alternatives are presented in Chapter VII of the Draft EIR. Although the proposed project is not subject to the National Environmental Policy Act guidelines, the information contained in the EIR provides the information requested by the commentor.

Comment D-4: "Plans and Policies. Page IV.A-8 states 'the Park Service can object to development unrelated to utility management or other uses not permitted by the terms of the easements.' This statement is incorrect and should be removed from the FEIR. The National Park Service, as any other reviewer, can comment or object on proposed developments on land within the easements. The Joint Communications Procedures Between the San Francisco Public

Utilities Commission and the Golden Gate National Recreation Area for Routine Work and Special Projects within the San Francisco Peninsula Watershed (March 1997, copy attached); Section B describes the communication on proposed projects within the easements apart from routine maintenance work. It states 'GGNRA will review such projects and may comment in writing within 30 days of receipt. GGNRA may request a consultation, meeting or further information regarding the proposed project at any time within the 30 day comment period.' " (United States Department of the Interior, National Park Service, Golden Gate National Recreation Area)

Comment D-5: "Page IV.A-9 states that 'Therefore, no concurrence on the part of the federal government is required.' The EIR (Page III-45) lists, under required permits and approvals, the U.S. Army Corps of Engineers and the U.S. Fish and Wildlife, two federal government agencies. The sentence should be stricken from this page and from page IV.B-7." (United States Department of the Interior, National Park Service, Golden Gate National Recreation Area)

Response: The attachment submitted by the commentor consisting of the *Joint Communications Procedures between the San Francisco Public Utilities Commission and the Golden Gate Recreation Area for Routine Work and Special Projects Within the San Francisco Peninsula Watershed* is acknowledged. The SFPUC would comply with all requirements of these communications procedures, as applicable to the proposed project. These requirements are summarized on Draft EIR pages IV.A-8 and IV.A-9. In order to avoid misinterpretation of the agreement, the following text changes have been made to DEIR pages IV.A-8 (paragraph 4) and IV.A-9 (paragraph 1) for clarification:

> In 1980, Congress transferred responsibility for administration of the easements to the National Park Service–Golden Gate National Recreation Area. The legislation provides that the terms of the easements are to be administered by the National Park Service. The Peninsula Watershed is not part of a national park or recreation area per se, as the SFPUC retains ownership of the land and the National Park Service has only a limited interest~~; the Park Service can object to development unrelated to utility management or other uses not permitted by the terms of the easements~~. The City is not bound by National Park Service planning mandates or procedures that Golden Gate National Recreation Area must follow. Certain activities unrelated to water supply and utility operations may require "concurrence" of the U.S. Department of the Interior. However, the proposed Pulgas Dechloramination Facility would be a water utility structure, and its construction is an exercise of the City's reserved rights under the terms of both easements. Therefore, no concurrence on the part of the ~~federal government~~**GGNRA** is required.

E. LAND USE

Comment E-1: "Page V-19, N-2: Excess disturbance to natural resources from construction roads and staging areas should be given consideration in evaluating temporary impact to recreational users." (United States Department of the Interior, National Park Service, Golden Gate National Recreation Area)

Response: While the mitigation measure noted in the comment above (Mitgation Measure N-2) addresses construction disruption to recreational users, construction and operation of the proposed project at the Pulgas site, as described on Draft EIR pages III-25 through III-30, are designed to minimize disturbance to wildlife habitats and other natural resources. Construction access roads and staging areas would be located on previously disturbed areas to the extent possible to minimize impacts to natural resources. The natural resources effects of the proposed project are discussed on DEIR pages IV.C-22 through IV.C-33, and mitigation measures that would reduce natural resources impacts to less than significant are listed on DEIR pages V-2 through V-10.

F. BIOLOGICAL RESOURCES

1.0 SPECIAL-STATUS SPECIES

Comment F-1: "This concerns the Hetch Hetchy Water Treatment Project Chloramine Conversion Environmental Impact Report. The proposed project could potentially affect the Central Valley and Central California steelhead evolutionary significant units (ESU) which are listed as threatened under the Endangered Species Act in 63 FR 13347 and 62 FR 43937, respectively. Also potentially affected are three ESUs of chinook salmon; the Sacramento River Winter-Run chinook (listed as endangered by 59 FR 440), the Central Valley Spring-Run chinook (listed as threatened by 64 FR 50394) and the Central Valley Fall/Late Fall-Run (a candidate for listing under 64 FR 50394). These species are known to reside in or use the San Francisco Bay as a migration corridor. Critical habitat for the steelhead and Central Valley Spring-Run chinook salmon ESUs was designated in 65 FR 7764. Critical habitat for the Sacramento River Winter-Run chinook salmon was designated in 58 FR 33212." (United States Department of Commerce)

Comment F-2: "Because of significant impacts to steelhead and chinook and their habitat, the NMFS is concerned that adequate corrective measures be implemented to ensure that the aquatic resources of the San Francisco Bay are protected. We request the San Francisco Planning Department work with NMFS and the Regional Board to address the issues raised in this letter." (United States Department of Commerce)

Response: The above comments address fisheries impacts associated with the attainment of water quality standards for metals, specifically copper, tin, and lead, in discharges. Please see the response provided for Comments G-11 and G-12. As detailed in that response, this project would be in compliance with copper levels regulated under the Lead and Copper Rule, the City's current NPDES permits for discharges of treated wastewater to the San Francisco Bay, and the RWQCB's Total Maximum Daily Load plan, and thus the project would result in less than significant impacts to water quality and the Bay. Therefore, the proposed project would result in less than significant impacts to steelhead and chinook salmon and their habitat.

Comment F-3: "Page IV.C-20, paragraph 3. Suggest showing the snake and frog habitat on a map. Clarify the location of the 'overflow channel work area.' The sentences beginning with 'Grasslands adjacent...' and 'While observed near the site...' seem contradictory, please explain." (United States Department of the Interior, National Park Service, Golden Gate National Recreation Area)

Response: The comment concerns the quality of grasslands habitat at the Pulgas site for supporting California red-legged frog. The seasonally moist willow-riparian habitats identified near the Pulgas site provide upland habitat and potential breeding habitat for both California red-legged frog and San Francisco garter snake. Ephemeral water is available at both willow habitat areas. California red-legged frogs are known to migrate through habitats near breeding pools in search of summer habitat, and may aestivate within grasslands if suitable cover is available. The grasslands at the Pulgas site, as described in DEIR Section IV.C, Biological Resources, refer

specifically to that portion of the project footprint that is covered by grasslands, and apply to the proposed location of the dechloramination facility. While some grasslands in the project vicinity provide excellent habitat for both San Francisco garter snake and California red-legged frog, a thorough survey of the project site did not identify habitat components required by California red-legged frog in the subject grassland. The grasslands in question were generally devoid of burrows, cover (such as woody debris), and topographic features that would provide aestivation or concealment for California red-legged frog. It cannot be ruled out that frogs could seasonally migrate across the site, and it should be clarified that the California red-legged frog is not expected to use the annual grassland portion of the Pulgas site as upland aestivation habitat because of the generally poor cover this area provides.

In response to this comment, DEIR page IV.C-8, Figure IV.C-1 has been revised, as shown on the following page.

Comment F-4: "Special Status Species- The EIR states that San Francisco garter snake and California red legged frog are likely present on the project site and could be impacted during construction of the project. Measure C-6d. states that construction fencing to keep frogs and snakes from the construction area may be used if 'practicable'. No other alternate measures are identified if it is determined that this is not 'practicable'.

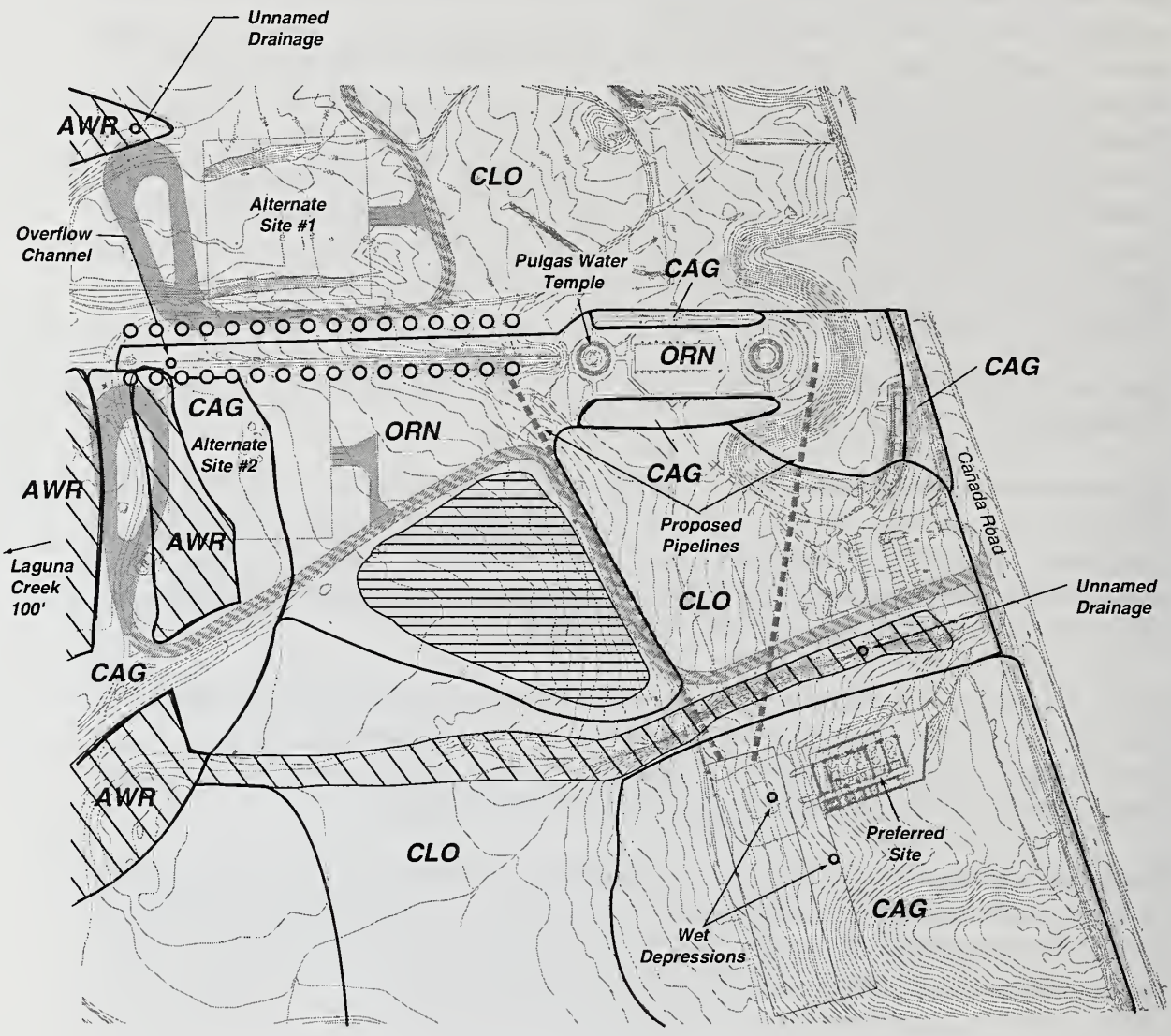
Additional measures for construction impacts must be identified and included in the EIR to make a finding that the project would result in less-than-significant impacts to these species. Identification of these measures is critical given the likelihood of impacts to the garter snake, as illustrated by the BART extension construction." (City of San Mateo)

Response: Comment F-4 is noted, and Mitigation Measure C-6d will be revised, as noted below. In addition, other means of excluding these species could be implemented in coordination with the U.S. Fish and Wildlife Service (USFWS). Such a situation could arise, for example, where the terrain changes abruptly, such as in a creek bed. In a case such as this, other means of excluding these species from the construction zone would be implemented. This may include the use of 4-foot-tall silt fences buried to a depth of 6 inches. While not as sturdy or permanent, this solution could temporarily function as well as plywood sheets. Any selected exclusion method(s) (including the use of plywood sheets) would be approved by the USFWS prior to their implementation.

In response to this comment, text on DEIR page V-6, Mitigation Measure C-6d has been revised:

> d. ~~If practicable, t~~**T**he work area shall be fenced with **USFWS-approved** frog- and snake-proof **barriers, such as** mesh fenc**inge**~~,~~ or 4- x 8-foot plywood panels joined lengthwise.

As stated in Mitigation Measure C-4, formal consultation with the USFWS may be initiated to address threatened and endangered species issues. Informal USFWS consultation occurred during EIR preparation and assisted in the analysis of project impacts conducted for the natural resources section (DEIR Section IV.C). The mitigation measures included in the DEIR are



SOURCE: Environmental Science Associates, 1999, Revised 2000.

1998.898E: Hetch Hetchy Water Treatment Chloramine Conversion Project EIR / 990095 ■

Figure IV.C-1 (Revised)
Pulgas Dechloramination Facility Vegetation Communities and Prominent Natural Features

considered sufficient to address potentially significant biological impacts to threatened and endangered species, and could be expanded upon if the USFWS were to request formal consultation.

The commentor's concerns regarding recent BART extension construction problems[1] may not be fully applicable to the proposed project. The issue in question is the ability of snakes to pass under or through plywood fences and into construction work areas. In the case of the multi-year BART extension project, small mammal activities located near exclusion fences may have breached fence integrity and allowed snakes into construction zones. This problem is not expected for the proposed project because construction would be completed within a shorter, 14 month, time frame (see DEIR Table III-2). As stated above, additional mitigation measures would be carried out at the discretion of the USFWS, if required.

2.0 WETLANDS

Comment F-5: "Page V-3, Wetlands Impacts C-1d. Identify the location of habitat replacement. Clarify if the SF Watershed will provide habitat replacement for Tesla, San Antonio, or Alameda East, including the possibility of creating wetlands." (United States Department of the Interior, National Park Service, Golden Gate National Recreation Area)

Response: The project design would avoid disruption of jurisdictional wetlands if possible. A formal delineation of wetlands has not been conducted to confirm if there would be any loss of wetlands. However, if replacement wetlands are necessary, the SFPUC would try to identify a location within the same watershed where the loss occurs. No specific sites have been identified at this time.

Comment F-6: "Board staff approve of the PUCs intentions to delineate wetland areas and avoid these wherever possible, reduce impacts where total avoidance is not possible, and mitigate impacts only as a last alternative. The disturbance or fill of any wetlands will require water quality certification by the Board, pursuant to section 401 of the Clean Water Act. Additional comments on wetlands are included in the Board's general comments (attached)." (California Regional Water Quality Control Board)

Comment F-7: "**Wetlands.** Wetlands enhance water quality through such natural functions as flood and erosion control, stream bank stabilization, and filtration and purification of contaminants. Wetlands also provide critical habitats for hundreds of species of fish, birds, and other wildlife, offer open space, and provide many recreational opportunities. Water quality impacts occur in wetlands from construction of structures in waterways, dredging, filling, and altering drainage to wetlands.

The Regional Board must certify that any permit issued by the U.S. Army Corps of Engineers pursuant to Section 404 of the Clean Water Act (covering, dredging, or filling of Waters of the

[1] San Francisco Chronicle. BART Project Hits Brakes for Snakes: Endangered Reptile Shares Road to SFO. Marshall Wilson, July 16, 2000.

United States, including wetlands) complies with state water quality standards, or waive such certification. Section 401 Water Quality Certification is necessary for all 404 Nationwide permits, reporting and non-reporting, as well as individual permits.

All projects must be evaluated for the presence of jurisdictional wetlands and other Waters of the State. Destruction of or impact to these waters should be avoided. If the proposed project impacts wetlands or other Waters of the State and the project applicant is unable to demonstrate that the project was unable to avoid those adverse impacts, water quality certification will most likely be denied. 401 Certification may also be denied based on significant adverse impacts to wetlands or other Waters of the State. In considering proposals to fill wetlands, the Regional Board has adopted the California Wetlands Conservation Policy (Executive Order W-59-93, signed August 23, 1993). The goals of the Policy include ensuring 'no overall net loss and achieving a long-term net gain in the quantity, quality, and permanence of wetlands acreage and values.' Under this Policy, the Regional Board also considers the potential post-construction impacts to wetlands and Waters of the State and evaluates the measures proposed to mitigate those impacts (see Storm Water Quality Control, below).

The Regional Board has adopted U.S. EPA's Clean Water Act Section 404(b)(1) 'Guidelines for Specification of Disposal Sites for Dredge or Fill Material,' dated December 24, 1980, in the Board's Basin Plan for determining the circumstances under which fill may be permitted.

Section 404(b)(1) Guidelines prohibit all discharges of fill material into regulated waters of the United States, unless a discharge, as proposed, constitutes the least environmentally damaging practicable alternative that will achieve the basic project purpose. For non-water dependent projects, the guidelines assume that there are less damaging alternatives, and the applicant must rebut that assumption.

The Section 404(b)(1) Guidelines sequence the order in which proposals should be approached. First, impacts to wetlands or Waters of the State must be avoided to the maximum extent practicable. Second, the remaining impacts must be minimized. Finally, the remaining unavoidable adverse impacts to wetlands or Waters of the State must be mitigated. Mitigation will be preferably in-kind and on-site, with no net destruction of habitat value. A proportionately greater amount of mitigation is required for projects that are out-of-kind and/or off-site. Mitigation will preferably be completed prior to, or at least simultaneous to, the filling or other loss of existing wetlands.

Successful mitigation projects are complex tasks and difficult to achieve. This issue will be strongly considered during agency review of any proposed wetland fill. Wetland features or ponds created as mitigation for the loss of existing jurisdictional wetlands or Waters of the United States cannot be used as storm water treatment controls.

In general, if a proposed project impacts wetlands or Waters of the State and the project applicant is unable to demonstrate that the project was unable to avoid adverse impacts to wetlands or Waters of the State, water quality certification will be denied. 401 Certification may also be

denied based on significant adverse impacts to wetlands or other Waters of the State." (California Regional Water Quality Control Board)

Response: As noted, the proposed project would avoid disturbance of wetlands to the extent possible. If disturbance of wetlands is unavoidable, the SFPUC would comply with all applicable federal and state regulations, which are described in Comments F-6 and F-7 above.

3.0 PULGAS SITE

Comment F-8: "Page IV.C-9, paragraph 3. Clarify whether this description applies to the entire project area, or the immediate vicinity of the temple, and tie the description to Figure IV.C-1." (United States Department of the Interior, National Park Service, Golden Gate National Recreation Area)

Response: The description on DEIR page IV.C-9, paragraphs 2 and 3, applies to the area south and east of the Pulgas Water Temple, which includes a reflecting pool, a wooded area between the western (gated) parking lot, the areas of proposed road widening south of the temple, and the work area adjacent to the overflow channel west of the temple. The area west of the temple, adjacent to the overflow channel, is also described on page IV.C-9, paragraph 3. These areas are shown on DEIR Figure IV.C-1 (page IV.C-8) as CAG (California annual grasslands) habitat adjacent to Cañada Road, ORN (ornamental) habitat to the west, and CAG and CLO (coast live oak woodland) habitat to the south.

Comment F-9: "Page IV.C-19, paragraph 2 in ***Pulgas Site***. Conclusion conflicts with Table IV.C-3 (unnamed creek). The 'wet depressions' shown on Figure IV.C-1 should also be incorporated into this discussion." (United States Department of the Interior, National Park Service, Golden Gate National Recreation Area)

Response: DEIR page IV.C-19, paragraph 2 concludes that the grassland portion of the Pulgas site "does not appear to provide suitable habitat for San Francisco garter snake or California red-legged frog." Table IV.C-3 states that for California red-legged frog, "potential breeding and aestivation habitat occur in an unnamed creek 50 feet north of the preferred dechloramination facility site. Also, known to occur northwest of the dechloramination site." For San Francisco garter snake, "Potential breeding and aestivation habitat occur in an unnamed creek 50 feet north of Pulgas site. Also, known to occur northwest of the site." These statements do not appear conflicting.

The wet depressions are described in the Biological Resources section on DEIR pages IV.C-8 and IV.C-27.

Comment F-10. "Page IV.C-19, last paragraph. Change 'the area surrounding the Pulgas site' to 'the area surrounding the Pulgas Water Temple.'" (United States Department of the Interior, National Park Service, Golden Gate National Recreation Area)

Response: In response to this comment, and as staff-initiated text changes, DEIR pages IV.C-19 through IV.C-21 have been revised to clarify biological resources information for the Pulgas area. Please see Chapter III of this document.

4.0 TREE IMPACTS

Comment F-11: "Loss of trees- The loss of up to 55 native Oak and Redwood trees is determined to be a less-than-significant impact in the EIR. It is difficult to assess the impact since no information about the size, condition or location of the trees is given. It is stated that these trees have not been identified as a natural community. However, the statement that "numerous large coast live oak trees" would be removed indicates that given the number and size of trees to be removed, the project would result in significant biological and aesthetic impacts. Since there are no mitigation measures proposed, the document does not contain information that would allow the loss of these trees to be considered a less-than-significant impact." (City of San Mateo)

Comments F-12: "Clarify the mitigation for the loss of the coast live oaks." (United States Department of the Interior, National Park Service, Golden Gate National Recreation Area)

Response: In response to these comments, and to clarify DEIR text, DEIR page IV.C-29, paragraph 1 has been revised:

> ### Tree Impacts
>
> Only nonprotected ornamental trees were identified at the Tesla Portal site in San Joaquin County and the Pulgas Balancing Reservoir and Harry W. Tracy WTP sites in San Mateo County. Alameda County protects heritage trees; however, the Sunol Valley project sites are outside of the Alameda *East County Area Plan* sphere of influence (County of Alameda, 1993). No protections are afforded to trees that occur at these sites. Trees at the Pulgas site include cork oak orchard near the Pulgas Water Temple (roughly 10 to 15 trees would be removed), a row of redwood trees growing near the overflow channel (approximately 20 trees would be removed), and ~~numerous~~ large coast live oak trees at the Pulgas site (roughly 10 to 20 trees would be removed). In addition, approximately 10 Lombardy poplars and 25 unidentified ornamental trees (*Prunus* sp.) would be removed at the Pulgas site to accommodate the project. These trees have not been identified as a sensitive natural community in local or regional plans**, or by lists compiled by CDFG or USFWS**. Therefore, removal of trees at the Pulgas site would be considered less than significant.

The coast live oak natural community has a California Department of Fish and Game global ranking of G4 and a state ranking of S4, meaning that populations are secure.[2] As such, the California Department of Fish and Game does not regulate tree removal or removal of this habitat type. Neither the global or state ranking warrant sufficient concern by the state or federal

[2] The California Department of Fish and Game global rank (G-rank) is a reflection of the overall condition of an element throughout its global range. The state rank (S-rank) is assigned much the same way as the global rank, except state ranks in California often also contain a threat designation attached to the S-rank.

governments that would require replacement of individual trees. No city or county regulations apply to the removal of nonheritage trees by a public utility.

However, tree removal regulations would apply where willow-riparian and coast live oak riparian forest are impacted by project construction in the unnamed drainage. Tree replacement within this riparian corridor would be required as an element of permitting requirements with the California Department of Fish and Game (CDFG Code, Section 1600 *et seq.*) and U.S. Army Corps of Engineers (Section 404 permit). Mitigation for the removal of these trees is described in Mitigation Measure C-8 for impacts to willow riparian habitat.

Although not required by regulation or as mitigation, replacement of oak trees outside the riparian corridor is under consideration by the SFPUC and could be included as part of the revegetation plan that would be prepared during the project design phase.

5.0 AQUATIC HABITAT

Comment F-13: "Page IV.C-7: Peninsula Aquatic Habitat section should be expanded to include non-fish aquatic species." (United States Department of the Interior, National Park Service, Golden Gate National Recreation Area)

Response: In response to this comment, text on DEIR page IV.C-7, paragraph 2 has been revised:

Peninsula Aquatic Habitat

The three Peninsula sites (Pulgas Balancing Reservoir, Pulgas site, and Harry W. Tracy WTP) discharge water into two natural bodies of water, Upper Crystal Springs Reservoir and San Andreas Reservoir. These coldwater reservoirs and their tributaries serve as habitat for a variety of fish species and other aquatic life. Though there are more nonnative fish species, such as mosquitofish and largemouth bass, native fish species such as resident rainbow trout (*Oncorhynchus mykiss*), Sacramento sucker, and threespine stickleback also occur in the watershed. **In addition to fish species, the reservoirs provide habitat for western toad (*Bufo boreas*) and gopher snake (*Pituophis melanoleucus*), and reservoir fish serve as forage for blue heron (*Ardea herodius*), great egret (*Casmerodius albus*), snowy egret (*Egretta thula*), and other bird species. Aquatic plants provide food-chain support for insect larvae and water bugs such as stoneflies (Plecoptera), mayflies (Ephemoroptera), water beetles (Coleoptera), and true aquatic bugs (Heteroptera).** The aquatic habitats of the reservoirs could be affected in the case of an accidental release of deleterious substances.

6.0 LANDSCAPE PLANTS

Comment F-14: "Page V-9. Monitoring should occur for at least 3 years to ensure cover is established. All weeds that colonize the disturbed areas should be removed during the establishment phase." (United States Department of the Interior, National Park Service, Golden Gate National Recreation Area)

Response: A revegetation plan has not yet been prepared, as it has not been determined to what extent revegetation could be required. Such a plan would be prepared during project design and would include site-specific revegetation details. Mitigation Measure C-8 includes recommended minimum performance standards for the revegetation plan. The stated monitoring period, five years, exceeds that expressed by the commentor. A 100 percent weed control performance criteria, as suggested by the commentor, may be feasible for certain large, noxious weeds (e.g., pampas grass), but is not considered attainable for all weeds. Specific weed abatement protocols would be developed as part of the revegetation plan.

Comment F-15: "Same page [DEIR page V-9]. Change 'landscaping' to 'revegetation.' " (United States Department of the Interior, National Park Service, Golden Gate National Recreation Area)

Response: In response to this comment, DEIR page V-9, Mitigation Measure C-11 has been revised:

> C-11 As part of the site clearing and grubbing for construction, identified invasive plant species (e.g., yellow-star thistle, purple-star thistle, or french broom) shall be removed prior to seed germination (before June) so that seeds of these plants are not dispersed within the project area. Disturbed natural areas as a result of construction shall be revegetated with appropriate native herbaceous or woody species. Revegetation shall begin as soon as construction-related activities are completed. Monitoring of the seeded herbaceous areas would occur prior to the first wet season following revegetation to ensure that sufficient ground coverage has developed.
>
> Native species should be used in ~~landscaping~~**revegetation**. If nonnative plant species are included in the ~~landscape~~**revegetation** planting palette, certain plants must be avoided. These plants are listed in Table V-1.
>
> Implementation of the Mitigation Measure C-11 would reduce impacts related to invasive landscape plant species to a less than significant level.

Comment F-16: "Table V-1, Change 'German Ivy' to 'Cape Ivy.' " (United States Department of the Interior, National Park Service, Golden Gate National Recreation Area)

Response: German ivy is synonymous with cape ivy. The Latin name was revised in the late 1990s from *Senecio mikianoides* to *Delairia odorata.* In response to this comment, DEIR page V-10, Table V-1 has been revised.

TABLE V-1
PLANT SPECIES THAT MAY NOT BE USED IN PROJECT LANDSCAPING

Pampas grass (*Cortaderia jubata, C. selloana*)
Tree-of-heaven (*Ailanthus altissima*)
Giant reed (*Arundo donax*)
Bamboo (*Bambusa* spp., *et al*)
Cotoneaster (*Cotoneaster pannosa*)
French broom (*Cytisus monspessulanus*)
Scotch broom (*Cytisus scoparius*)
Blue gum (*Eucalyptus globulus*)
English ivy (*Hedera helix*)
Fig-marigold family members (*Conicosia*, *Mesembryanthemum*, and *Carpobrotus*)
Tall fescue (*Festuca arundinacea*)
Mattress vine (*Muelenbeckia complexa*)
Tree tobacco (*Nicotiana glauca*)
Fountain grass (*Pennisetum setaceum*)
Pyracantha (*Pyracantha angustifolia*)
Castor bean (*Ricinus communis*)
Black locust (*Robinia pseudoacacia*)
~~German ivy (*Senecio mikianoides*)~~
Cape ivy (*Delaira odorata*)
Spanish broom (*Sparteum junceum*)
Tamarisk (*Tamarix* spp.)
Gorse (*Ulex europaeus*)
Periwinkle (*Vinca major*)
Purple fountain grass (*Pennisetum setaceum)*

SOURCE: ESA, 1999

Comment F-17: "Biological Resources. In addition to the following items, GGNRA staff would appreciate the opportunity to review the landscape plant list for the Pulgas site when it becomes available." (United States Department of the Interior, National Park Service, Golden Gate National Recreation Area)

Comment F-18: "The GGNRA would appreciate the opportunity to be involved in establishing mitigation goals/criteria for vegetation communities and to review the selected mitigation measures." (United States Department of the Interior, National Park Service, Golden Gate National Recreation Area)

Response: Comments F-17 and F-18 are noted. The SFPUC could make the revegetation plan and mitigation goals/criteria available for review at the time they are prepared. The SFPUC would consider comments on the revegetation plan and mitigation goals/criteria.

G. HYDROLOGY AND WATER QUALITY

1.0 ALAMEDA CREEK

Comment G-1: "Thank you for the opportunity to comment on the Draft Environmental Impact Report (DEIR) for the Hetch Hetchy Water Treatment Chloramine Conversion Project. The Alameda County Water District (ACWD) is a special district providing water service to over 318,250 people in the cities of Fremont, Newark, and Union City. Although the amount varies depending on hydrologic conditions, in past years, ACWD has relied on Alameda Creek to provide in excess of 30,00 acre-feet of local and imported water for groundwater replenishment. The water is percolated into the Niles Cone Groundwater Basin (downstream of Niles Canyon) through percolation both in Alameda Creek itself and the adjacent Quarry Lakes recharge area. The water is subsequently recovered through ACWD's groundwater production wells and provided as potable supply to ACWD customers. Protection of the Alameda Creek Watershed, an area that encompasses key facilities proposed in the subject project, is very important in order to preserve and enhance the water resources available to ACWD." (Alameda County Water District)

Response: As one of the Bay Area Water Users Association (BAWUA) member agencies, the Alameda County Water District (ACWD) will be included in the BAWUA and public outreach program, and the SFPUC will continue to notify the ACWD about the chloramine conversion program. The SFPUC, as purveyors of water in the Alameda Creek watershed, is also committed to protecting and maintaining water quality within the watershed. In addition, Improvement Measures N-4 and N-5 would provide further coordination with BAWUA member agencies (see DEIR page V-20).

2.0 AMMONIA TOXICITY

Comment G-2: "Page IV.D-16. In the discussion of Ammonia Toxicity, it is unclear how the assumed instantaneous mixing and pH and temperature equilibrium in the receiving water will occur." (United States Department of the Interior, National Park Service, Golden Gate National Recreation Area)

Comment G-3: "The estimated un-ionized ammonia concentration is much lower than the limit established in the Board's Basin Plan. However the assumptions and calculations used to arrive at this figure are not included in DEIR. These must be presented along with the estimated concentration in order for that figure to be credible." (California Regional Water Quality Control Board)

Comment G-4: "The DEIR should include the assumptions and calculations leading to the estimated maximum concentration of unionized ammonia that may be discharged to surface waters during overflows." (California Regional Water Quality Control Board)

Comment G-5: "Project Description-Pulgas Site. Section III.D.20 (Page III-6, paragraph 3): The basis for the RWQCB objectives for ammonia should be discussed. The degree of ammonia removal should be fully protective of aquatic organisms, not simply compliant with RWQCB objectives." (United States Department of the Interior, National Park Service, Golden Gate National Recreation Area)

Response: As described on Draft EIR page IV.D-9, the RWQCB is responsible for protection of water quality in the San Francisco Bay Area, and to this effect has established water quality objectives to protect and maintain aquatic resources. The applicable RWQCB water quality objectives that apply to the Pulgas Site project area are for the Lower San Francisco Bay Region. These include a specific water quality objective for un-ionized ammonia, the toxic form of ammonia. The RWQCB water quality objective for un-ionized ammonia is 0.40 mg/L; this is the maximum un-ionized ammonia concentration that the RWQCB considers allowable for protection of aquatic resources in receiving waters. The RWQCB objectives are designed to be fully protective of a waterway's beneficial uses, which in the case of Upper Crystal Springs Reservoir, includes aquatic habitat. As part of the proposed project, the SFPUC would comply with the RWQCB water quality objectives, including the objective for un-ionized ammonia; therefore, discharges to Upper Crystal Springs Reservoir would be considered fully protective of aquatic organisms. It is not within the scope of this EIR to explain or justify the basis for the RWQCB objectives.

Draft EIR pages IV.D-15 through IV.D-16 discuss potential ammonia toxicity, related to the proposed project. This analysis is based on the chemical properties of ammonia, the proposed ammonia dosage, and the ambient conditions in the water system and in the reservoir. (See Chapter III of this document for staff-initiated text changes regarding ambient reservoir conditions.) The discussion concludes that the proposed project would comply with RWQCB water quality objectives for un-ionized ammonia and therefore would not result in toxic conditions for the aquatic habitat in Upper Crystal Springs Reservoir.

When ammonia is dissolved in water, it breaks down (dissociates) into two forms: the ionized form and the un-ionized form. Total ammonia is the sum of both un-ionized and ionized ammonia. Ammonia in the un-ionized form is toxic to aquatic organisms, while the ionized form of ammonia is considerably less toxic. The relative concentrations of the two forms of ammonia depend mainly upon the pH and temperature of the water, where the percentage of un-ionized ammonia increases as the pH and temperature of the water increase. To a lesser extent, the salinity of water also affects the relative concentration of un-ionized ammonia, where the percentage of un-ionized ammonia decreases with increased salinity. Table 1 shows the percentage of un-ionized ammonia over a range of pH and temperature conditions; these percentages were used to calculate the maximum possible concentrations of un-ionized ammonia (shown in bold in Table 1) that could be present in both the discharge water and in the receiving water under the proposed project.

The proposed project would inject a maximum dosage of 0.50 mg/L of total ammonia into the water supply system. This ammonia would dissociate into the un-ionized and ionized forms, with

TABLE 1
PERCENT UN-IONIZED AMMONIA IN AQUEOUS AMMONIA SOLUTIONS FOR A RANGE OF TEMPERATURE AND pH

Temp. (C)	pH								
	6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0
0	.00827	.0261	.0826	.261	.820	2.55	7.64	20.7	45.3
1	.00899	.0284	.0898	.284	.891	2.77	8.25	22.1	47.3
2	.00977	.0309	.0977	.308	.968	3.00	8.90	23.6	49.4
3	.0106	.0336	.106	.335	1.05	3.25	9.60	25.1	51.5
4	.0115	.0364	.115	.363	1.14	3.52	10.3	26.7	53.5
5	.0125	.0395	.125	.394	1.23	3.80	11.1	28.3	55.6
6	.0136	.0429	.135	.427	1.34	4.11	11.9	30.0	57.6
7	.0147	.0464	.147	.462	1.45	4.44	12.8	31.7	59.5
8	.0159	.0503	.159	.501	1.57	4.79	13.7	33.5	61.4
9	.0172	.0544	.172	.542	1.69	5.16	14.7	35.3	63.3
10	.0186	.0589	.186	.586	1.83	5.56	15.7	37.1	65.1
11	.0201	.0637	.201	.633	1.97	5.99	16.8	38.9	66.8
12	.0218	.0688	.217	.684	2.13	6.44	17.9	40.8	68.5
13	.0235	.0743	.235	.738	2.30	6.92	19.0	42.6	70.2
14	.0254	.0802	.253	.796	2.48	7.43	20.2	44.5	71.7
15	.0274	.0865	.273	.859	2.67	7.97	21.5	46.4	73.3
16	.0295	.0933	.294	.925	2.87	8.54	22.8	48.3	74.7
17	.0318	.101	.317	.996	3.08	9.14	24.1	50.2	76.1
18	.0343	.108	.342	1.07	3.31	9.78	25.5	52.0	77.4
19	.0369	.117	.368	1.15	3.56	10.5	27.0	53.9	78.7
20	.0397	.125	.396	1.24	3.82	11.2	**28.4**	55.7	79.9
21	.0427	.135	.425	1.33	4.10	11.9	29.9	57.5	81.0
22	.0459	.145	.457	1.43	4.39	12.7	31.5	59.2	82.1
23	.0493	.156	.491	1.54	4.70	13.5	33.0	60.9	83.2
24	.0530	.167	.527	1.65	5.03	**14.4**	34.6	62.6	84.1
25	.0569	.180	.566	1.77	5.38	15.3	36.3	64.3	85.1
26	.0610	.193	.607	1.89	5.75	16.2	37.9	65.9	85.9
27	.0654	.207	.651	2.03	6.15	17.2	39.6	67.4	86.8
28	.0701	.221	.697	2.17	6.56	18.2	41.2	68.9	87.5
29	.0752	.237	.747	2.32	7.00	19.2	42.9	70.4	88.3
30	.0805	.254	.799	2.48	7.46	20.3	44.6	71.8	89.0

Note: From Emerson et al. 1975; reproduced from the Journal of the Fisheries Research Board of Canada, as referenced in San Francisco Water Team, prepared for San Francisco Public Utilities Commission, *Hetch Hetchy Water Treatment Project, Phase 1A Preliminary Engineering Report*, 1996. Appendices, Technical Memorandum No. 1.

the relative concentration depending on the pH and temperature of the water supply system. The pH of the SFPUC water supply system ranges from 7.5 to 9.0, and the temperature ranges from 10 to 20 degrees Celsius (°C). The conditions resulting in the highest percentage of un-ionized ammonia would occur with the highest pH (9.0) and the highest temperature (20°C); this combination of conditions has been determined to cause about 28.4 percent of the total ammonia to be in the un-ionized form (see Table 1). Therefore, under worst-case conditions with no removal of ammonia (i.e., system failure), the maximum concentration of un-ionized ammonia in the water supply system would be 28.4 percent of the maximum dosage of total ammonia of 0.50 mg/L. The calculated result is a maximum concentration of 0.14 mg/L of un-ionized ammonia in the water supply system. This concentration is well below the RWQCB maximum limit of 0.40 mg/L and would not be considered toxic to aquatic organisms. At the proposed Pulgas dechloramination facility, total ammonia levels would be reduced by up to 90 percent through the dechloramination process, so that under normal operating conditions, the discharge to Upper Crystal Springs Reservoir would contain considerably lower concentrations of un-ionized ammonia than 0.14 mg/L. Any discharge from the proposed dechloramination facility to Upper Crystal Springs Reservoir, including discharge during a system failure event, would be well below toxic levels of un-ionized ammonia.

The Upper Crystal Springs Reservoir has a typical pH range of 6.5 to 8.5, and a temperature range of 10 to 24 degrees Celsius. When discharges from the proposed dechloramination facility are mixed with the ambient water in Upper Crystal Springs Reservoir, the concentration of total ammonia would be diluted and the relative concentration of un-ionized ammonia would depend on the pH and temperature of the ambient water. The reservoir conditions resulting in the highest percentage of un-ionized ammonia would occur with the highest pH (8.5) and the highest temperature (24°C), or about 14.4 percent of the total ammonia (see Table 1). Therefore, under worst-case conditions—which represent an extreme upper limit that would occur only in the unlikely event that the dechloramination system fails (i.e., no ammonia is removed) at the same time that the reservoir experiences the highest pH and temperature conditions of its typical range—the maximum concentration of un-ionized ammonia that could be present in Upper Crystal Springs Reservoir, assuming no mixing, would be 14.4 percent of 0.50 mg/L, or 0.072 mg/L. This concentration is well below the RWQCB maximum limit of 0.40 mg/L and would not be considered toxic to aquatic organisms.

The addition of ammonia to both the discharge and the reservoir would result in concentrations of un-ionized ammonia well below the toxic level; thus, any mixing of the two waters would also result in concentrations below toxic levels. Since mixing would readily occur with the turbulence of the discharge waters, it would be expected that equilibrium conditions with the ambient water would occur fairly rapidly. In any event, neither the discharge, the ambient reservoir waters, nor the two combined would contain levels of un-ionized ammonia in excess of the RWQCB water quality objective. Therefore, as stated on Draft EIR page IV.D-16, the proposed project would not result in toxic ammonia conditions in Upper Crystal Springs Reservoir under normal operating conditions or even under system upset conditions.

Table 2 summarizes the calculations of maximum, worst-case scenario concentrations of un-ionized ammonia that could be present in the discharge and in Upper Crystal Springs Reservoir as a result of the proposed project.

TABLE 2
MAXIMUM, WORST-CASE SCENARIO
UN-IONIZED AMMONIA CALCULATIONS

Maximum Total Ammonia Concentration	pH Range	Temperature Range	Maximum Percent Un-Ionized Ammonia (from Table 1)[a]	Maximum Un-Ionized Ammonia Concentration[b]
Proposed Dechloramination Facility Discharge (assumes no ammonia removal, i.e., system failure)				
0.50 mg/L	7.5	10° C	0.586%	0.003 mg/L
0.50 mg/L	7.5	20° C	1.24%	0.006 mg/L
0.50 mg/L	9.0	10° C	15.7%	0.079 mg/L
0.50 mg/L	9.0	20° C	28.4%	0.142 mg/L
Upper Crystals Springs Reservoir (assumes no mixing and no ammonia removal)				
0.50 mg/L	6.5	10° C	0.589%	0.003 mg/L
0.50 mg/L	6.5	24° C	0.167%	0.008 mg/L
0.50 mg/L	8.5	10° C	5.56%	0.028 mg/L
0.50 mg/L	8.5	24° C	14.4%	0.072 mg/L

a Assumes zero salinity, resulting in the worst-case un-ionized ammonia scenario.
b The RWQCB Basin Plan water quality objective for maximum un-ionized ammonia in the project area is 0.40 mg/L.

SOURCE: ESA+Orion, 2000

3.0 PULGAS BALANCING RESERVOIR

Comment G-6: "PULGAS BALANCING RESERVOIR. Overflows of treated water from this reservoir flow through the unnamed drainage that has been identified as Endangered Species habitat. Special consideration should be given to ensure that the water quality (undiluted by the reservoir) in this small drainage meet appropriate criteria." (United States Department of the Interior, National Park Service, Golden Gate National Recreation Area)

Response: Currently, overflows of treated water occur at the Pulgas Balancing Reservoir about once a year to the unnamed drainage south of the Pulgas Water Temple parking lot (see DEIR page IV.D-19). As described in the EIR, these overflows will be dechlorinated as part of the SFPUC Pulgas Dechlorination Facility Project, which is a separate project that is discussed in the DEIR in the section entitled "Summary of Cumulative Environmental Effects" (see DEIR pages VI-4 through VI-5); the design of this project has been completed and the project is pending final environmental and funding approval. If that project is delayed or cancelled due to funding or other considerations, the dechlorination facilities for the Pulgas Balancing Reservoir would be incorporated into this proposed project for chloramine conversion. Therefore, all discharge of chlorinated compounds from the balancing reservoir to the unnamed drainage would be eliminated. As discussed on Draft EIR page IV.D-19, any residual ammonia remaining in the overflows from the balancing reservoir would be discharged to the unnamed drainage. However, levels of residual ammonia in the discharge would be well below toxic levels established by the RWQCB in the Basin Plan (discussed on DEIR pages IV.D-15 and IV.D-16 and also under Section G.2.0, Ammonia Toxicity, above); therefore, the discharge would be protective of aquatic habitats and associated wildlife.

4.0 HARRY W. TRACY WTP

Comment G-7: "**HARRY W. TRACY WTP.** The rationale for not including ammonia removal should be expanded to protect the aquatic system in the immediate vicinity of the discharge." (United States Department of the Interior, National Park Service, Golden Gate National Recreation Area)

Comment G-8: "This drainage should also be addressed explicitly under Water Quality Degradation from a Chemical Spill." (United States Department of the Interior, National Park Service, Golden Gate National Recreation Area)

Response: At the Harry W. Tracy WTP, periodic overflows of treated water are discharged to San Andreas Reservoir, as discussed on Draft EIR pages IV.D-19 and IV.D-20. These discharges occur at the adit structure, which is the same location where raw water is drawn into the raw water pump station. This indicates that in the immediate vicinity of the discharge, the existing aquatic system has adapted to the ongoing active turnover and exchange of raw water and treated water. With the proposed project, there would be no change in water exchange or turnover rates. Periodic overflows of chlorinated water would continue to occur, but would be dechlorinated prior to discharge to San Andreas Reservoir at a permanent dechlorination facility built as part of this project. As noted on DEIR page IV.D-19, under the proposed project chloraminated water could overflow from treated water reservoirs and then enter San Andreas Reservoir. However, it is anticipated that the overflows would rarely occur, and the volumes of the overflows would be small. The amount of residual ammonia entering San Andreas Reservoir from these overflows would not be sufficient to cause algal stimulation. The results of calculations similar to those described in the response to Comments G-2 through G-5 would be expected to reinforce the conclusion that periodic overflow of chloraminated water to the reservoir would not exceed the RWQCB objective for un-ionized ammonia. Furthermore, the Draft EIR includes a mitigation

measure for monitoring ammonia levels and implementing appropriate nutrient management techniques to protect aquatic habitats from residual levels of ammonia in overflows to San Andreas Reservoir (see page V-7, Mitigation Measure C-8). Therefore, with implementation of the mitigation measures, potential impacts to aquatic habitats at San Andreas Reservoir would be less than significant.

The potential for a chemical spill at the Harry W. Tracy WTP is discussed on Draft EIR page IV.D.21. As indicated in the discussion, the proposed project would include state-of-the-art design features for monitoring and secondary containment at all chemical handling facilities and site-specific hazardous materials business plans; therefore, this impact would be less than significant for all project sites, including the drainage in the vicinity of the Harry W. Tracy WTP. There would be no possibility of a chemical spill at the discharge outlet at the Harry W. Tracy WTP, since chemical handling and containment facilities would be located well upstream of this portion of the flow.

5.0 CHLORAMINE TOXICITY

Comment G-9: "Page IV.D-16. Add references to the discussion of Chloramine Toxicity. Clarify what the statement 'chloramine may react with aquatic organisms.' The concluding statement is misleading. Infrequent discharges do not eliminate ammonia toxicity." (United States Department of the Interior, National Park Service, Golden Gate National Recreation Area)

Response: The text on Draft EIR page IV.D-16 has been revised as follows to clarify and to provide references regarding the discussion of chloramine toxicity:

> ***Chloramine Toxicity***
>
> Chloramine is regulated in the Basin Plan as a form of chlorine. Like chlorine and ammonia, chloramine is toxic to aquatic life due to its reactive nature. Chloramine has been shown to be toxic to both fish and invertebrates **(aquatic animals that take water directly into their system, such as through gills),** and **it** is generally more stable and more persistent than chlorine. Studies have shown that toxicity of chloramine, similar to that of chlorine, appears to be influenced by pH, with lower toxic effects with lower pH. If discharged into natural waters, chloramine may ~~react with~~**result in toxic conditions to** aquatic organisms**, depending on the concentration and ambient conditions (SFWT, 1996)**. Additionally, the use of chloramine can introduce both chlorine and ammonia into natural waters, either as free ions or through disassociation of the chloramine molecule after its introduction to natural waters. Depending on the frequency and volume of anticipated discharges, either dechlorination or dechloramination of discharges to natural waters is proposed as part of the project. In ~~most~~ locations where discharges **to natural waters occur**~~are infrequent or small in volume~~, removal of **all of**~~only~~ the **residual** chlorine ~~chloramine~~, ~~(~~**as proposed through** dechlorination **or dechloramination,**~~) is sufficient to~~ **would** eliminate toxicity **associated with chloramine. Therefore,**

since the proposed project would remove all residual chlorine at all discharges to natural waters, the project would be in compliance with Basin Plan requirements and would provide protection of aquatic organisms from chloramine toxicity.

In addition, the following has been added as the third reference on DEIR page IV.D-29:

San Francisco Water Team (SFWT), prepared for San Francisco Public Utilities Commission, Hetch Hetchy Water Treatment Project, Phase 1A Preliminary Engineering Report, 1996. Appendices, Technical Memorandum No. 1, Chloramine Toxicity.

6.0 CHLORINE RESIDUAL

Comment G-10: "Page IV.D-18-19. Pulgas Site. Clarify if the chlorine residual regulatory level is protective for chloramine toxicity. Clarify how 90% removal translates to discharge concentrations." (United States Department of the Interior, National Park Service, Golden Gate National Recreation Area)

Response: The Basin Plan effluent limitation for residual chlorine, as free chlorine plus chloramine, is 0.0 mg/L as the instantaneous limit, which is designed to be fully protective of aquatic organisms. The proposed project would meet this limit by designing the project for 100 percent removal of chlorine at all sites that discharge to surface water bodies, in full compliance with the RWQCB regulatory limits in the Basin Plan. At all sites, the proposed project would also be in full compliance with RWQCB water quality objectives for un-ionized ammonia. At the Pulgas dechloramination facility, the project is also proposing as much as 90 percent removal of ammonia to prevent biostimulatory effects in Upper Crystal Springs Reservoir, as described on DEIR page IV.D-19.

7.0 COPPER SOLVENCY

Comment G-11: "However, the potential impact of switching to chloramine is not addressed in the context of increased cuprosolvency that may be experienced in the distribution system. We are also concerned that the solvency of other metals present in the system may be increased such as lead, tin and zinc. According to the US Environmental Protection Agency's (EPA) Lead and Copper Rule for drinking water quality, the concentrations of lead and copper should not exceed (action level) 0.015 mg/L and 1.3 mg/L respectively (EPA 812-F-96-002). We are particularly concerned about copper because any increased amount in discharges may be harmful to listed salmonids.

The San Francisco Bay is currently listed under section 303 (d) of the Clean Water Act as having impaired water quality due to excessive copper concentrations. This means that the water body has exceeded its capacity to assimilate additional, identified wasteloads. The concentration of copper that may be present in water bodies identified as marine is 3.1 µ/L for continuous chronic exposure. In waterbodies identified as freshwater (which may be the discharge point for several

users of this water) the allowable chronic concentration is 9 µ/L with an acute criteria concentration of 13 µ/L.

In California, the State Water Resources Control Board and the Regional Water Quality Control Boards are responsible for ensuring that the ambient water quality standards are met. The San Francisco Bay Regional Water Quality Control Board (Regional Board) is tasked, in cooperation with the US EPA, in developing a Total Maximum Daily Load (TMDL) plan to reduce the concentration and mass of copper found in the Bay. Through this program, individual discharges (industrial facilities and wastewater treatment plants) are assigned a set amount of copper that they may discharge. An allotment is also made for nonpoint sources. This chloramine conversion project needs to be analyzed by the Regional Board to determine if it will deleteriously affect their TMDL development as well as adding an additional amount of harmful copper, and possibly other contaminants, to the San Francisco Bay through the local treatment works. The local treatment works will have to determine if they can handle and treat the additional loading without violating the requirements in their discharge permits.

This particular concern stems from reports of increased cuprosolvency in water systems that have switched to chloramine for their residual disinfection. The most notable report concerned the City of Tucson, Arizona. A report by the Tucson Regional Water Council states, 'Chloramine increased the corrosion of copper and copper alloy pipes.' It also states that 'Chloramine attacks certain elastomer fittings in household plumbing such as the joints in plastic pipes and plastic or rubber toilet flappers.' This report is found at www.azstarnet.com/~trwc/rwtpc.htm.

Copper solubility was also enhanced in the presence of excess ammonia from the chloramination process in Champaign, Illinois when their system was converted to chloramine. Reference to this study is found in an EPA document that may provide useful in your analysis, EPA/600/R-95/085, Effect of pH, DIC, Orthophosphate and Sulfate on Drinking Water Cuprosolvency." (United States Department of Commerce)

Response: The American Water Works Association Research Foundation (AWWARF) is the water industry leader in research covering all areas of water supply and treatment, operation, and utility management in North America. Based on AWWARF research and publications on the impacts of chloramine on elastomeric and metallic/alloy plumbing materials, the proposed chloramine conversion of the SFPUC water system is not anticipated to affect the corrosion rate or solvency of copper in the water for the following reasons: (1) pH was found to be the most important determinant of corrosion rates, and higher corrosion rates of copper were observed in the presence of free chlorine or chloramine only at low pH of 6 or less, and the SFPUC water system maintains a pH greater than 8; (2) at the pH of the water in the distribution system, the concentration of chlorine, either combined or free, was found to have no effect on corrosion; (3) free chlorine was found to exert a higher oxidant effect on copper pipe than chloramines at equivalent concentrations; and (4) ammonia or ammonium have little effect on corrosion of copper alloys, and free ammonia in the distribution system at levels associated with use of chloramines has no effect on copper corrosion. Therefore, since chloramine conversion would not affect levels of copper in the water supply distribution system, the proposed project would have no effect on the levels of copper in the wastewater discharges to the Bay.

The SFPUC drinking water supply is currently in full compliance with copper levels regulated under the Lead and Copper Rule. The concentration of copper measured in the SFPUC system has ranged from 0.02 to 0.13 mg/L (or 20 to 130 µg/L), which is well below the action level of 1.3 mg/L (or 1,300 µg/L). Therefore, there are currently no water quality issues associated with copper levels in the drinking water supply, and for reasons stated above, there would be no changes with the proposed project.

The current National Pollutant Discharge Elimination System (NPDES) permit for discharges of treated wastewater to San Francisco Bay from the Southeast Water Pollution Control Plant sets a maximum discharge limit of final effluent copper concentration of 37 µg/L. In the three-year period from 1997 through 1999, the measured concentration of copper in the final effluent from the Southeast Water Pollution Control Plant ranged from 4.9 to 29.6 µg/L, which is well below the discharge limit in the NPDES permit. As described above, the proposed project would not be expected to affect the level of copper in wastewater discharges. Therefore, since the copper discharges are in compliance with the NPDES permit and would continue to be so after implementation of the proposed project, the proposed project would have no effect on copper loading to the Bay or on the RWQCB's Total Maximum Daily Load plan.

As noted by the commentor, chloramine is known to cause deterioration of certain types of rubber. DEIR page II-5 describes this process and notes that some commonly used household plumbing seals in hot water tanks and toilet flap valves would require replacement with a different type of rubber once deterioration occurs. The SFPUC public outreach program will address this indirect effect and will provide information on ways to safeguard against potential problems.

8.0 DISCHARGES TO BAY

Comment G-12: "Our concern with the project is the potential effect of using chloramine for disinfection on the quality of wastewater discharged to the San Francisco Bay and through ocean outfalls in the vicinity of the Bay." (United States Department of Commerce)

Comment G-13: "Page IV.D-27. End-Use. Most Presidio storm drainage is discharged untreated. When SFPUC water is used outdoors as irrigation, the chloramine residual goes untreated and runoff may be discharged into storm drains." (United States Department of the Interior, National Park Service, Golden Gate National Recreation Area)

Response: The Initial Study prepared for this project, and attached as DEIR Appendix A, includes an analysis of the effects of chloramine on wastewater discharges to the Bay, including discharges from the wastewater treatment plants, from combined sewer overflows, and from nonpoint discharges to the Bay (refer to Appendix A pages 35 and 36). As described in the Initial Study, the levels of chloramines in treated wastewater associated with the proposed disinfection process would result in less than significant impacts to water quality and the Bay. This is because wastewater is dechlorinated prior to discharge to the Bay and because levels of ammonia associated with the disinfection process would be within the normal variation of ammonia levels typically present in wastewater (less than 2 percent). Similarly, chloramines in combined sewer

discharges would constitute a negligible percentage when considered relative to the level of ammonia typically present in these discharges (composed of wastewater diluted with rainwater). Draft EIR page IV.D-27 also includes an assessment of end use of chloraminated water, such as outdoor irrigation, where chloraminated water may enter storm drains. As stated in the EIR, the volumes of this type of discharge are generally not large enough to threaten waterways. In addition, the chloramine in such discharges dissipates through contact with lawns and soils. Therefore, even in areas such as the Presidio where storm drains flow directly to the Bay without treatment, the discharges would not be anticipated to affect water quality or result in toxic conditions due to the low volumes and the low levels of chloramine after it dissipates through contact with vegetation and soils.

9.0 EROSION CONTROL

Comment G-14: "While the erosion and sediment control measures proposed in the DEIR appear thorough and laudable, they are not described in sufficient detail to ensure that erosion and sedimentation of surface waters will not result. The project proponent should describe the specific erosion and sediment control measures to be implemented during the project's construction. Those described in the SFPUC construction specifications for erosion and sediment control appear adequate." (California Regional Water Quality Control Board

Comment G-15: "The DEIR should specify all stormwater and erosion control BMPs to be implemented during and after the construction of the project. (California Regional Water Quality Control Board)

Comment G-16: "**Erosion.** The project should minimize erosion and control sediment during and after construction. This should be done by developing and implementing an erosion control plan, or equivalent plan. This plan should be included in the SWPPP. The plan should specify all control measures that will be used or which are anticipated to be used, including but not limited to, the following:

- Limit access routes and stabilize access points.
- Stabilize denuded areas as soon as possible with seeding, mulching, or other effective methods.
- Protect adjacent properties with vegetative buffer strips, sediment barriers, or other effective methods.
- Delineate clearing limits, easements, setbacks, sensitive areas, vegetation and drainage courses by marking them in the field.
- Stabilize and prevent erosion from temporary conveyance channels and outlets.
- Use sediment controls and filtration to remove sediment from water generated by dewatering or collected on-site during construction. For large sites, stormwater settling basins will often be necessary." (California Regional Water Quality Control Board)

Response: The EIR describes proposed erosion and sediment control measures on pages IV.D-14 and IV.D-15. The SFPUC would implement these measures, in addition to the required Storm Water Pollution Prevention Plan at the Pulgas site, as part of the proposed project, which would reduce potential erosion and sedimentation impacts to less than significant. The SFPUC would incorporate standard construction specifications for erosion and sediment control

as part of contract specifications and would implement best management practices to the extent feasible at all construction sites to eliminate or minimize erosion. The best management practices would include measures such as: limiting access routes and stabilizing access points; stabilizing denuded areas as soon as possible; protecting adjacent properties with vegetative buffer strips or sediment barriers; delineating clearing limits, easements, setbacks, sensitive areas, vegetation, and drainage courses in the field; stabilizing and preventing erosion from temporary conveyance channels; and using sediment controls and filtration to remove sediment from water generated by dewatering or collected on-site during construction.

10.0 NPDES PERMIT REQUIREMENTS

Comment G-17: "**NPDES.** Water quality degradation is regulated by the Federal National Pollutant Discharge Elimination System (NPDES) Program, established by the Clean Water Act, which controls and reduces pollutants to water bodies from point and nonpoint discharges. In California, the program is administered by the California Regional Water Quality Control Boards. The Regional Board issues NPDES permits for discharges to water bodies in the San Francisco Bay Area, including Municipal (area- or county-wide) Stormwater Discharge Permits.

Projects disturbing more than five acres of land during construction must be covered under the State NPDES General Permit for Discharges of Storm Water Associated with Construction Activity (General Permit). This can be accomplished by filing a Notice of Intent with the State Water Resources Control Board. An NOI and the General Permit can be obtained from the Board at (510) 622-2300. The project sponsor must propose and implement control measures that are consistent with the General Permit and with the recommendations and policies of the local agency and the RWQCB.

Projects that include facilities with discharges of Storm Water Associated with Industrial Activity must be covered under the State NPDES General Permit for Discharges of Storm Water Associated with Industrial Activity. This may be accomplished by filing a Notice of Intent. The project sponsor must propose control measures that are consistent with this, and with recommendations and policies of the local agency and the RWQCB. In a few cases, the project sponsor may apply for (or the RWQCB may require) issuance of an individual (industry- or facility-specific) permit.

The RWQCB's Urban Runoff Management Program requires Bay Area municipalities to develop and implement storm water management plans (SWMPs). The SWMPs must include a program for implementing new development and construction site storm water quality controls. The objective of this component is to ensure that appropriate measures to control pollutants from new development are considered during the planning phase, before construction begins; implemented during the construction phase; and maintained after construction, throughout the life of the project." (California Regional Water Quality Control Board)

Response: The proposed project would comply with all aspects of the NPDES program that are applicable to a project of this nature, including the General Permit for stormwater discharges from construction sites greater than five acres.

11.0 STORMWATER CONTROLS AND BEST MANAGEMENT PRACTICES

Comment G-18: "Site Planning. The project should minimize impacts from project development by incorporating appropriate site planning concepts. This should be accomplished by designing and proposing site planning options as early in the project planning phases as possible. Appropriate site planning concepts to include, but are not limited to the following:

- Phase construction to limit areas and periods of impact.
- Minimize directly connected impervious areas.
- Preserve natural topography, existing drainage courses and existing vegetation.
- Locate construction and structures as far as possible from streams, wetlands, drainage areas, etc.
- Provide undeveloped, vegetated buffer zones between development and streams, wetlands, drainage areas, etc.
- Reduce paved area through cluster development, narrower streets, use of porous pavement and/or retaining natural surfaces.
- Minimize the use of gutters and curbs which concentrate and direct runoff to impermeable surfaces.
- Use existing vegetation and create new vegetated areas to promote infiltration.
- Design and lay out communities to reduce reliance on cars.
- Include green areas for people to walk their pets, thereby reducing build-up of bacteria, worms, viruses, nutrients, etc. in impermeable areas, or institute ordinances requiring owners to collect pets' excrement.
- Incorporate low-maintenance landscaping.
- Design and lay out streets and storm drain systems to facilitate easy maintenance and cleaning.
- Consider the need for runoff collection and treatment systems.
- Label storm drains to discourage dumping of pollutants into them." (California Regional Water Quality Control Board)

Comment G-19: "Chemical and Waste Management. The project should minimize impacts from chemicals and wastes used or generated during construction. This should be done by developing and implementing a plan or set of control measures. The plan or control measures should be included in the SWPPP. The plan should specify all control measures that will be used or which are anticipated to be used, including, but not limited to, the following:

- Designated specific areas of the site, away from streams or storm drain inlets, for storage, preparation, and disposal of building materials, chemical products, and wastes.
- Store stockpiled materials and wastes under a roof or plastic sheeting.
- Store containers of paint, chemicals, solvents, and other hazardous materials stored in containers under cover during rainy periods.
- Berm around storage areas to prevent contact with runoff.
- Cover open dumpsters securely with plastic sheeting, a tarp, or other cover during rainy periods.
- Designate specific areas of the site, away from streams or storm drain inlets, for auto and equipment parking and for routine vehicle and equipment maintenance.
- Routinely maintain all vehicles and heavy equipment to avoid leaks.

- Perform major maintenance, repair, and vehicle and equipment washing off-site, or in designated and controlled areas on-site.
- Collect used motor oil, radiator coolant or other fluids with drip pans or drop cloths.
- Store and label spent fluids carefully prior to recycling or proper disposal.
- Sweep up spilled dry materials (cement, mortar, fertilizers, etc.) immediately--do not use water to wash them away.
- Clean up liquid spills on paved or impermeable surfaces using 'dry' cleanup methods (e.g., absorbent materials, cat litter, rags) and dispose of cleanup materials properly.
- Clean up spills on dirt areas by digging up and properly disposing of the soil.
- Keep paint removal wastes, fresh concrete, cement mortars, cleared vegetation, and demolition wastes out of gutters, streams, and storm drains by using proper containment and disposal." (California Regional Water Quality Control Board)

Comment G-20: "Post-Construction. The project should minimize impacts from pollutants that may be generated by the project following construction, when the project is complete and occupied or in operation. These pollutants may include: sediments, bacteria, metals, solvents, oil, grease, and pesticides, all of which are typically generated during the life of a residential, commercial, or industrial project after construction has ceased. This should be done by developing and implementing a plan and set of control measures. The plan or control measures should be included in the SWPPP.

The plan should specify all control measures that will be used or which are anticipated to be used, including, but not limited to, the source controls and treatment controls listed in the Recommendations. Appropriate control measures are discussed in the Recommendations, in:

- Table 2: Summary of residential post-construction BMP selection
- Table 3: Summary of industrial post-construction BMP selection
- Table 4: Summary of commercial post-construction BMP selection

Additional sources of information that should be consulted for BMP selection include the *California Storm Water Best Management Practice Handbooks*; the Bay Area Preamble to the *California Storm Water Best Management Practice Handbooks and New Development Recommendations*; the BASMAA New Development Subcommittee meetings, minutes, and distributed information; and Regional Board staff. Regional Board staff also have fact sheets and other information available for a variety of structural stormwater treatment controls, such as grassy swales, porous pavement and extended detention ponds." (California Regional Water Quality Control Board)

Response: The proposed project would incorporate water quality control measures and best management practices to the extent feasible during site planning, construction, and post construction. Measures for chemical and waste management during construction are typically incorporated into standard construction specifications. The SFPUC would implement as many feasible measures recommended in RWQCB Comments G-18, G-19, and G-20, as applicable to the proposed project at each facility site.

12.0 AGENCY NOTIFICATION

Comment G-21: "Finally, the SFPUC should state in the DEIR that Board staff will be notified every time a discharge occurs." (California Regional Water Quality Control Board)

Response: The SFPUC conducts reporting and notification to the RWQCB as required by its NPDES permits and other water quality regulations. RWQCB notification is not required every time a discharge occurs. However, the SFPUC must notify the RWQCB that discharges may occur (such as filing a report of waste discharges, if required), and the RWQCB would determine whether permits and additional reporting are necessary. Otherwise, notification is required only when the discharge violates a particular standard or prohibition, or when notification is specifically required under a permit issued by the RWQCB.

13.0 OPERATIONAL STORMWATER CONTROL

Comment G-22: "The project would cause an increase in the volume and velocity of stormwater runoff, which, while individually limited in its effects, may be cumulatively significant in the context of other development in the affected watersheds. To reduce this impact, the SFPUC should develop a long-term SWPPP to be effective for the life of the project. This SWPPP should include the on-site capture and treatment of 80-90% of each site's estimated average annual runoff. More information on stormwater control is included in the Board's general comments (attached)." (California Regional Water Quality Control Board)

Comment G-23: "The DEIR should include long-term stormwater measures for all sites in the SWPPP, including the treatment of 80-90% of each site's average annual runoff for the life of the project." (California Regional Water Quality Control Board)

Comment G-24: "**Hydrology and Water Quality.** The increase in stormwater runoff (p. IV.D-23) should be considered for the small unnamed drainage to ensure that erosion will not be induced there." (United States Department of the Interior, National Park Service, Golden Gate National Recreation Area)

Comment G-25: "Regional Board staff encourage the project proponent and the lead agency to refer to a copy of 'Start at the Source,' a design guidance manual for storm water quality protection, which provides innovative ways of designing structures, parking lots, drainage systems, and landscaping. This manual may be obtained at most cities' planning departments, or by contacting the San Francisco Estuary Project at (510) 622-2465." (California Regional Water Quality Control Board)

Comment G-26: "**Storm Water Quality Control.** Storm water is the major source of fresh water to creeks and waterways. Storm water quality is affected by a variety of land uses and the pollutants generated by these activities. Development and construction activities cause both site-specific and cumulative water quality impacts. Water quality degradation may occur during construction due to discharges of sediment, chemicals, and wastes to nearby storm drains or creeks. Water quality degradation may occur after construction is complete, due to discharges of

petroleum hydrocarbons, oil, grease, and metals from vehicles, pesticides and fertilizers from landscaping, and bacteria from pets and people. Runoff may be concentrated and storm water flow increased by newly developed impervious surfaces, which will mobilize and transport pollutants deposited on these surfaces to storm drains and creeks. Changes in runoff quantity or velocity may cause erosion or siltation in streams. Cumulatively, these discharges will increase pollutant loads in creeks and wetlands within the local watershed, and ultimately in San Francisco Bay.

To assist municipalities in the Bay Area with complying with an area-wide NPDES Municipal Storm Water Permit or to develop a Baseline Urban Runoff Program (if they are not yet a co-permittee with a Municipal Storm Water Permit), the Regional Board distributed the *Staff Recommendations for New and Redevelopment Control for Storm Water Programs* (Recommendations) in April 1994. The Recommendations describe the Regional Board's expectations of municipalities in protecting storm water quality from impacts due to new and redevelopment projects, including establishing policies and requirements to apply to development areas and projects; initiating appropriate planning, review, approval, and inspection procedures; and using best management practices (BMPs) during construction and post-construction.

Project impacts should be minimized by developing and implementing a Storm Water Pollution Prevention Plan (SWPPP). A SWPPP is required by the State Construction Storm Water General Permit (General Permit). The SWPPP should be consistent with the terms of the General Permit, the Manual of Standards of Erosion & Sedimentation Control Measures by the Association of Bay Area Governments (ABAG), policies and recommendations of the local urban runoff program (city and/or county), and the Recommendations of the RWQCB. SWPPPs should also be required for projects that may have impacts, but which are not required to obtain an NPDES permit. Preparation of a SWPPP should be a condition of development. Implementation of the SWPPP should be enforced during the construction period via appropriate options such as citations, stop work orders, or withholding occupancy permits.

Impacts identified should be avoided and minimized by developing and implementing the types of controls listed below. Explanations of the controls are available in the Regional Board's construction *Field Manual*, available from Friends of the San Francisco Estuary at (510) 286-0924, in BASMAA's *Start at the Source*, and in the *California Storm Water Best Management Practice Handbooks*." (California Regional Water Quality Control Board)

Response: Regarding cumulative development in the watershed and the impacts of cumulative projects on stormwater runoff, Draft EIR pages III-44 and III-45 and pages VI-2 through VI-8 describe foreseeable future development that could contribute to cumulative development. In the Peninsula Watershed, these projects include the Pulgas Dechlorination Facility, the Pulgas Balancing Reservoir Improvements, and the Lower Crystal Springs Dam Abutment Protection Project. In the Sunol Valley, the foreseeable future projects consist of the Sunol Valley WTP Improvement Project and the Alameda Creek Fishery Enhancement Project. In both watersheds, all of the projects would have zero to minimal increases in impervious surfaces and therefore would have no substantive effect on cumulative increases in stormwater volumes or velocity. In addition, the proposed project would be designed to minimize impervious surfaces at each site,

thereby minimizing long-term changes in stormwater patterns and flows. As shown in DEIR Table III-1 (see pages III-8 through III-10), the estimated maximum increase in impervious surfaces at all project locations would be less than once acre, which is a negligible increase within each of the various watersheds. Therefore, potential impacts associated with cumulative increases in stormwater due to the proposed project and to other planned projects are considered less than significant.

Comments G-22, G-23, G-25, and G-26 are directed towards management of comprehensive municipal stormwater systems in urban and suburban settings. The proposed project involves minor stormwater issues for relatively small water facilities. It does not involve redevelopment projects; development areas or projects; or areawide planning, review, approval, and inspection procedures, as referred to in the Comment G-26 discussion of the *Staff Recommendations for New and Redevelopment Control for Storm Water Programs*. There is no regulatory or impact-related indication that a SWPPP is required for this project, or that on-site capture of 80 to 90 percent of each site's annual estimated average runoff would be necessary. As described on DEIR pages IV.D-12 through IV.D-15, the proposed project would comply with RWQCB requirements for stormwater control during construction, as appropriate, including obtainment of and compliance with the General Permit (for sites greater than five acres) at the Pulgas site. For all other sites, the SFPUC would implement standard erosion and sediment control measures and other best management practices to protect surface water from potential stormwater impacts during construction (see also the response in Section II.G.9.0, Erosion Control, above).

14.0 GENERAL SUMMARY COMMENTS

Comment G-27: "Possible impacts: Without proper control and mitigation measures, the project could potentially result in:

- Discharge of chloraminated, chlorinated, or superchlorinated water to surface waters, resulting in the serious impairment of the habitat beneficial uses of such waters
- Discharge of concentrations of un-ionized ammonia that are sufficiently high to be toxic to fish
- Increased stormwater runoff that could result in onsite pollutants being carried to nearby surface waters, as well as increased erosion that could cause sedimentation of these waters.
- Construction may cause erosion, which could increase sediment loads in nearby surface waters, impairing water quality.
- Disturbance or destruction of wetlands" (California Regional Water Quality Control Board)

Comment G-28: "In order to prevent negative impacts to water quality, SFPUC proposes to implement the following measures:

- The project design would include an 'uninterruptible power supply', 'redundant design elements', 'site-specific emergency response plans', and would be constructed to 'withstand maximum probable earthquakes'. (IV.D-21)

- The total ammonia concentration in the SFPUC water supply would not exceed 0.50 mg/L. The DEIR concludes that under the anticipated range of temperature and pH conditions of the waters that might receive a discharge, the maximum concentration of un-ionized ammonia in discharge water would be 0.02 mg/L (less than the San Francisco Bay Basin Water Quality Control Plan's (Basin Plan's) 0.40 mg/L effluent limit).

- The project applicant assesses the impacts of increased runoff and the possibility of pollutant mobilization as not significant. No mitigation measures are proposed.

- The SFPUC intends to prepare a Stormwater Pollution Prevention Plan (SWPPP) for the Pulgas site, which would address erosion concerns for the construction period. All other sites would 'comply with standard SFPUC construction specifications for erosion and sediment control.'

- The project sites will be studied to delineate wetlands and attempts will be made to avoid impacting them wherever possible. If significant impacts cannot be avoided, the proponent will mitigate these losses pursuant to Army Corps of Engineers (Corps) and California Department of Fish and Game (CDFG) permits." (California Regional Water Quality Control Board)

Response: The commentor correctly summarizes water quality impacts and mitigation measures associated with the proposed project, as described in the Draft EIR. Implementation of project design features and mitigation measures included in DEIR Chapter V would reduce impacts to less than significant.

H. PUBLIC HEALTH

Comment H-1: "Chlorine and chloramine may have similar properties. Chlorine has a long history of use. Chloramine has a long history of use -- maybe not quite as long. In the scheme of things, though, chloramine introduction is a relatively new kind of entity. My concerns are not from a civil engineering standpoint or chemical engineering. They are from a medical science/safety standpoint. When you introduce something new into the environment that can affect people and life forms, you ask questions about what can happen short-term from a toxicology standpoint, what can happen long term, perform multi-generational studies. These are typically done in the laboratory, or you will conduct toxicology on animals -- that's what's required nowadays -- or you'll do breeding studies to see if progeny are affected by what you've done in unknown ways at low dosage. You don't know. So the questions would be, has there ever been a direct comparison of chlorine to chloramine in laboratory studies, for example, of animals. I saw one study when I did a little searching at the NIH, maybe about eight years ago, I guess, and they were looking at rats that had chloramine versus chlorine. It was only one study, and they concluded different things. One study doesn't make a story, in my mind, at all. So from that safety standpoint, I'm not -- a safety comparison of one versus the other -- I'm not challenging civil engineering or anything like that. I'm talking about safety aspects, those direct comparisons, side by side, should be done. I've experienced too many things like this. It's analogous, almost, to a pre-clinical that one does in developing a drug. This is not a drug, but it does affect millions of people. I'm speaking from the standpoint of being a citizen of the community, having family here. My son and his wife live here, my wife and I live here, and that's not as an engineer. I'm speaking in terms of safety." (Walter Goldstein, San Mateo Public Hearing)

Comment H-2: "Thank you for the copy of the subject report. As noted in past correspondence, attached for your convenience, safety in introduction of a new treatment chemical like this is most important. The report, page IV.E.-1-7, speaks of studies of byproducts formed in use of chlorine and chloramine and provides a reference to one study, AWWA, 1993 report. Optimizing Chloramine Treatment by Kirmeyer, et. al. Is that report available to be read as it seems to be the only reference on relative safety? Can a copy be provided?" (Walter E. Goldstein)

Comment H-3: "Changing the method of treating our water is extremely serious. Water is far from an inert substance. Adding chloramine versus chlorine causes a different reducing state for the water, which may directly affect organism growth and the response of mammalian cells and tissue to the fluid, which has been treated with this additive.

Therefore, what safety studies have been done to assure that this change will be healthy for humans and animals and not cause harmful effects over the short and long term?

What studies have been done in regard to side reactions and chemical by-products generated by contact of chloramine with other materials? This should be compared to chemical by-products generated due to contact of materials with chlorine.

What microbiological studies have been conducted to demonstrate adequacy of control of contamination comparing chloramine and chlorine treatment?" (Walter E. Goldstein)

Comment H-4: "It is most important that comparative biological safety studies have been conducted for reference. For example, there should be studies of the effects on microbes, including pathogens and non-pathogens. There should be evaluations of the effects on animals through toxicology, feeding, and multi-generation studies. These studies should then lead to prediction of potential effects on humans and other life forms. These subjects are mentioned. However, direct references on safety studies except for the single AWWA report noted are not provided. Perhaps these scientific studies have been completed. If so, I would like to be referred to them.

Certainly, when a relatively newer compound (chloramine) is introduced on a very large scale, and may substitute or partially replace another compound (chlorine) in use for a lengthier period, these questions are important. Sometimes a newer seemingly more beneficial entity is introduced and problems result that can be devastating. I think the biological/medical science side of this project should receive more attention than is apparent in areas noted." (Walter E. Goldstein)

Comment H-5: "The second item is, chlorine is a strong oxidizing agent. It works by absorbing hydrogen from entities and destroying them that way. Chloramine may have a similar function. I guess my question would be, have there been studies on the effects of the microbes, in terms of one agent versus the other directly, in terms of pathogens and things that are not pathogens which are beneficial, which forms -- were resistant forms created? I'm not advocating that we cease using chlorine or even chloramine. Obviously, we don't want to bring on disease. I'm advocating examination of a newer entity versus another one, a direct comparison, so we know scientifically if we can control microbiology the way we want to, and then we will do no harm to the environment or the health of the people or the life forms. That's my point, and thank you." (Walter Goldstein, San Mateo Public Hearing)

Response: While the proposed project would introduce a new method of disinfection to the SFPUC drinking water system, use of chloramine for disinfection is an established, proven technology and fully protective of public health and safety when used appropriately. Both the U.S. Environmental Protection Agency and the California Department of Health Services have recognized and adopted chloramine as an accepted method of disinfection, particularly for secondary disinfection, due to its ability to reduce the level of disinfection by-products.

Chloramine has been used in the United States for the treatment of drinking water since the early 1900s. Chloramine has been proven to be effective for disinfection, control of taste and odor, oxidation of organic and inorganic materials, and suppression of biological growth within drinking water treatment systems. Historically, chloramine use for water supply disinfection was common in the 1930s, but due to the scarcity of ammonia (a key component needed for the formation of chloramine) during World War II, most utilities converted to chlorine during and following the war. Therefore, chloramine use was not widespread during the 1950s and 1960s. More recently, chloramine use has become more common, due to the need to control the formation of disinfection by-products. In 1990, about one-fourth of the treatment facilities in the

U.S. were using chloramine for disinfection. With the recent adoption of the Disinfectants and Disinfection By-Products Rule, the use of chloramine is expected to become even more widespread. As described on Draft EIR page II-2, chloramine is currently being used for disinfection at numerous Bay Area utilities, including East Bay Municipal Utility District, Alameda County Water District, Santa Clara Valley Water District, Contra Costa Water District, and Marin Municipal Water District.

For information regarding chloramine health effects, toxicology, and animal and other studies, the commentor is referred to the following:

Bull R. J., and R. C. Kopfler. 1991. *Health Effects of Disinfectants and Disinfection By-Products*. Denver, Colo.: American Water Works Association Research Foundation and American Water Works Association. Access available through AWWARF website at <www.awwarf.com>

Kirmeyer, Gregory J., Glenn Foust, Gregory Pierson, Joseph Simmier, and Mark LeChevallier. 1993. *Optimizing Chloramine Treatment*. Denver, Colo.: American Water Works Association Research Foundation and American Water Works Association. Access available through AWWARF website at <www.awwarf.com>

U.S. Environmental Protection Agency. 1992, revised 1994. *Integrated Risk Information System (IRIS) Substance File – Monochloramine; CASRN 10599-90-3*. Access available through <www.epa.gov/ngispgm3/iris/subst/0644>

I. AESTHETICS

Comment I-1: "**Aesthetics.** The dechloramination facility requires construction of an industrial building in an undeveloped setting. The simulation on Page IV.F-12 shows a substantial impact to the view from scenic Cañada Road into the SF Watershed. The simulation does not show any of the architectural elements that are identified in the mitigation measures, such as a decorative gate or slanted roof. In addition to consultation with the Land and Resources Management Section, a professional architect should be consulted to design architectural elements that fit into the existing viewshed." (United States Department of the Interior, National Park Service, Golden Gate National Recreation Area)

Comment I-2: "Aesthetics Impacts- The proposed 20,000 square foot facility (30 feet tall) would be massive in comparison to any adjacent building or structure and would result in significant aesthetic impacts, especially given the recreational use and scenic nature of the project site. The project includes several mitigation measures and concludes that they would reduce the impact to a less than significant level. The measures identified (a sloped roof and exclusion of reflective materials for the building) are not enough to determine that the building would not have a significant impact. Additional information such as the materials and colors that are proposed for the building should be included." (City of San Mateo)

Comment I-3: "A berm to screen the building from Cañada Road is also proposed. No information is given regarding the height, location, etc., of the proposed berm. The inclusion of high berm would add an artificial feature along this roadway and would not entirely screen views of the building from the roadway or from the Pulgas Water Temple. This would have to be achieved with additional landscaping. Photo simulations with the proposed mitigation should be included in the document to assess this impact.

Given the sensitive nature of the site and the height of the building, consideration should be given to berming and landscaping directly around the building. This would create a more natural topography and would recess the building, helping to screen the building more effectively. The measures identified are not adequate to conclude that the project would not result in significant aesthetic impacts." (City of San Mateo)

Response: The EIR recognizes that the placement of the proposed Pulgas dechloramination facility building south of the Pulgas Water Temple would be a potentially significant impact, as it would introduce a sizable structure in a relatively undeveloped, scenic area. The mitigation measures suggested in the DEIR (pages V-12 and V-13) are deemed adequate to reduce the impact to a less than significant level, based on the following considerations.

First, the site proposed for the facility is not used for recreational purposes; in fact, no public access is permitted in the area of the proposed facility site. As stated in the DEIR (page IV.F-2), the site is not visible from the Pulgas Water Temple area, which is the recreational focus of the area. As also noted on DEIR page IV.F-2, and as shown in Figure IV.F-6 (page IV.F-13), the facility site is screened from the Pulgas Water Temple parking lot by dense vegetation, and

Figure IV.F-7 (page IV.F-14) indicates that the facility would be barely discernible from the parking lot.

Second, although a generally aesthetically pleasing area, the site and vicinity are not pristine environments. Aside from Cañada Road itself, existing views include a chainlink fence and "No Parking" signs along the road.

Third, close- and medium-range views of the proposed facility would not be available from any public area where people gather or linger. Views of the facility would primarily be seen from passing automobiles and bicycles travelling on Cañada Road. Thus, the perspectives illustrated in DEIR Figures IV.F-3 and IV.F-5 would be seen at high speed (relative to walking). Therefore, the overall aesthetic experience of traveling along Cañada Road would be only slightly, not substantially, diminished.

Fourth, the visual simulations in the EIR represent a worst-case scenario because they (a) assume maximum building size and tree removal, which could be less than shown; (b) leave out any architectural design, color treatment, or security gate that would minimize the appearance of the facility, although such design and treatment is planned as part of the project; and (c) leave out any landscaping that would screen the facility from the road, although extensive landscaping is planned as part of the project. The EIR simulations made these assumptions because the facility's architecture, color/materials, and landscaping scheme are only preliminary at this time, and any particular depiction could be misleading and subject to change. Color can be rendered in a way that makes a building almost invisible in a photosimulation, but the color would appear different when actually constructed and viewed. The facility would require a security gate across the access driveway which would further screen views of the facility from the road, but gate size and design have not yet been developed. Landscaping can be shown fully mature but would actually take years before such height and density could be achieved.

The project's sensitive architectural treatment, careful site planning to minimize the building size and the number of trees removed, and implementation of a revegetation plan would all serve to screen and soften the visual impact of the building. Over time, as landscaping matures, the building would be less and less visible from Cañada Road. Figures 1 and 2 of this Comments and Responses document show visual simulations with possible landscaping added (but still without architecture or color treatments).

An independent architectural firm provided the preliminary architectural designs for the project facilities that were used for the DEIR evaluation. The final design of project facilities would also be completed by professional architects, as required by standard SFPUC procedures, and would incorporate the above-described considerations for architectural treatments. Design of project landscaping would be completed by professional landscape architects, as required by standard SFPUC procedures.

SOURCE: Michael Willis Associates, 2000

Note: Details shown area for scale only

See Figure IV.F-1 for viewshed location
See Figure IV.F-2 for existing photo

Figure 1
Block Diagram of Pulgas Dechloramination Facility with Possible Landscaping, from Cañada Road, View 1

SOURCE: Michael Willis Associates, 2000

See Figure IV.F-1 for viewshed location
See Figure IV.F-4 for existing photo

Note: Details shown are for scale only.
Architectural treatment and security gate not shown.

Figure 2
Block Diagram of Pulgas Dechloramination Facility with Possible Landscaping, from Cañada Road, View 2

Regarding the berms proposed as mitigation, Mitigation Measures F-1 and F-6 both call for a combination of berms and landscaping to screen the building from Cañada Road. The intention is that berms would blend into the landscape contour to appear natural, in combination with landscaping consistent with existing vegetation. To clarify this intention, Draft EIR page V-13, Mitigation Measure F-6 has been revised:

> F-6 The access road shall be designed to minimize both the removal of existing native plants and the number of new plantings needed to provide screening. The entry road shall be curved, and ~~a~~**natural-appearing** berms shall be **graded in appropriate locations that**~~installed along the road to~~ screen views of the facility from Cañada Road. New plantings shall be placed on top of the berm to eventually screen views of the proposed building.

While aesthetic judgements among people can differ, the mitigation measures included in the EIR, as clarified above, are considered adequate for the project to avoid substantially degrading or obstructing scenic views from public areas or creating substantially negative aesthetic effects.

Comment I-4: "The mitigation measures for the aesthetics do not identify methods or reduce light and glare from lighting systems. Mitigation measures should be included to minimize nighttime lighting to reduce impacts to wildlife and to reduce the overall fugitive light, degrading the visibility of the dark night sky." (United States Department of the Interior, National Park Service, Golden Gate National Recreation Area)

Response: As discussed on DEIR page IV.F-15, exterior security lighting at the proposed dechloramination facility would be evident in views from Cañada Road and the Pulgas Water Temple parking lot. However, this lighting would not affect nighttime views from residential areas. The project would increase the amount of light and glare visible from Cañada Road, but this would be a less than significant impact, since no recreational use of the area occurs after dark. While not required to mitigate a significant impact, it is recommended that lighting be directed downward and that the lighting installed be the minimum necessary for security and operations. Safety lighting should be provided at the entry gate, the access road, and the parking area. Energy-efficient, low-wattage light fixtures should be used. SFPUC should consider using light fixtures with timers or separate switches to minimize lighting effects. The recommendations to minimize potential glare are included as Improvement Measure N-6 on page V-20 of the DEIR.

J. CULTURAL RESOURCES

Comment J-1: "**Cultural Resources.** Mitigation Measure G-1 should be strengthened to include an archaeologist on-site during ground disturbing activities at the Pulgas site. The EIR states the 'One prehistoric archaeological site CA-Sma-147, located approximately 800 feet south of the Pulgas Water Temple (Page IV.G-3).' Given the proximity of a recorded archaeological site, approximately 200 to 300 feet from the proposed dechloramination facility, it would appear prudent to retain an archaeologist during the soil excavation." (United States Department of the Interior, National Park Service, Golden Gate National Recreation Area)

Response: The EIR has been revised to include an increased level of mitigation at the Pulgas site for potential impacts to archaeological resources during construction. The following text changes have been made to the section entitled "Construction Impacts to Archaeological Resources," on Draft EIR page V-14.

Construction Impacts to Archaeological Resources

The following measure addresses potential impacts to cultural resources associated with project construction at the Tesla Portal, San Antonio Pump Station, Alameda East and West Portals, Pulgas, and Harry W. Tracy sites:

G-1 In the event of an inadvertent discovery of a cultural resource during construction **at the Tesla Portal, San Antonio Pump Station, Alameda East and West Portals, and Harry W. Tracy sites**, work within 25 feet of the find shall be stopped and a professional archaeologist shall be contacted to evaluate cultural resources and to determine appropriate treatment. The contractor shall comply with the recommendations of the archaeologist before resuming construction.

Given the location and depth of excavation proposed at the Pulgas site and the likelihood that archaeological resources would be encountered, the sponsor shall retain the services of an archaeologist. The archaeologist shall carry out a pre-excavation testing program to better determine the probability of finding cultural and historical remains. The testing program would use a series of mechanical, exploratory borings or trenches, and/or other testing methods determined by the archaeologist to be appropriate. The testing shall be terminated if the archaeologist determines, from subsurface inspections, that the area has been filled or disturbed during prior work.

If, after testing, the archaeologist determines that no further investigations or precautions are necessary to safeguard potentially significant archaeological resources, the archaeologist shall submit a written report to the Environmental Review Officer (ERO), with a copy to the project sponsor. If the archaeologist determines that further investigations or precautions are necessary, he/she shall consult with the ERO, and they

shall jointly determine what additional procedures are necessary to minimize potential effects on archaeological resources.

These additional procedures would be implemented by the project sponsor and could include a program of on-site monitoring of all site excavation, during which the archaeologist would record observations in a permanent log. The monitoring program, whether or not there are finds of significance, would result in a written report to be submitted first and directly to the ERO, with a copy to the project sponsor. During the monitoring program, the project sponsor would designate one individual as his/her on-site representative. This representative would have the authority to suspend work at the site to give the archaeologist time to investigate and evaluate archaeological resources, should they be encountered.

Should evidence of cultural resources of potential significance be found during the monitoring program, the archaeologist shall immediately notify the ERO, and the project sponsor shall halt any activities that the archaeologist and ERO jointly determine could damage such cultural resources. Ground-disturbing activities that might damage cultural resources would be suspended for a total maximum of four weeks over the course of construction.

After notifying the ERO, the archaeologist would prepare a written report to be submitted first and directly to the ERO, with a copy to the project sponsor, which would contain an assessment of the potential significance of the find and recommendations for what measures should be implemented to minimize potential effects on archaeological resources. Based on this report, the ERO would recommend specific additional mitigation measures to be implemented by the project sponsor. These additional mitigation measures could include a site security program, additional on-site investigations by the archaeologist, and/or documentation, preservation, and recovery of cultural material.

Finally, the archaeologist would prepare a report that documents the cultural resources discovered, evaluates their significance, and describes how any archaeological testing, exploration, and/or recovery program was conducted.

Copies of all draft reports prepared according to this mitigation measure would be sent first and directly to the ERO for review. Following approval by the ERO, copies of the final report(s) would be sent by the archaeologist directly to the President of the Landmarks Preservation Advisory Board and the California Historical Resources Information System, Northwest Information Center, Sonoma State University, Rohnert

Park. Three copies of the final archaeology report(s) shall be submitted to the Office of Environmental Review, accompanied by copies of the transmittals documenting its distribution to the President of the Landmarks Preservation Advisory Board and the California Historical Resources Information System, Northwest Information Center, Sonoma State University, Rohnert Park.

Implementation of Mitigation Measure G-1 would reduce potential construction impacts to archaeological resources to a less than significant level.

Comment J-2: "In addition, consulting with the Ohlone tribes on potential prehistoric finds is an important element for the project to ensure minimal delay if excavation unearths a burial site. The GGNRA can provide assistance in identifying and contacting appropriate individuals." (United States Department of the Interior, National Park Service, Golden Gate National Recreation Area)

Response: As described above in the response to Comment J-1, the mitigation measure for potential archaeological impacts at the Pulgas site during construction has been revised to provide a higher degree of protection for potential resources. The exposure of any burial sites during construction would be handled in accordance with state law.

K. GEOLOGY

Comment K-1: "Page IV.H-7, In the Calaveras Fault section, the second sentence is unclear." (United States Department of the Interior, National Park Service, Golden Gate National Recreation Area)

Response: In response to this comment, DEIR page IV.H-7, paragraph 3 has been revised:

The Calaveras Fault

The Calaveras fault is a right-lateral strike-slip fault associated with the San Andreas fault system. It is one of the largest **faults** in California ~~and has a vertical component responsible for the upward movement of the west side of the fault~~. The relative amount of horizontal movement is not exactly known, but has been estimated to be between 3 to 13 miles. Because the prevailing dip of the fault is almost vertical or to the west, the vertical component of the fault movement is reversed **and is responsible for the upward movement of the west side of the fault**. At least three major earthquakes have occurred along this fault since 1800, including the following:

- 1984 earthquake centered about 16 miles east of Watsonville at Coyote Dam with a Richter magnitude of 6.2
- 1911 earthquake centered east of San Jose with a Richter magnitude of 6.6
- 1861 earthquake believed to have been centered near Dublin and San Ramon, with an estimated Richter magnitude of about 6.4

The fault crosses the Hetch Hetchy Aqueduct at Calaveras Road on the east flank of the Sunol Valley. A western splay of the fault, sometimes referred to as the Sinbad fault, has been mapped on the west side of the valley, but trenching studies conducted for this project (SFWT, 1995) and by others have failed to yield evidence of Holocene or older activity of this splay (AGS, 1999). The estimated slip rate of the Calaveras fault is reported to be 6.0 ± 2.0 mm/yr. A characteristic earthquake on this fault would be expected to have a moment magnitude of 6.8 and a recurrence interval of 146 years (Simpson et al., 1994).

Comment K-2: "Page IV.H-17, paragraph 2, has a typing error, the EIR should read 'within an Alquist-Priolo Earthquake Fault Zone' not "with an Alquist-Priolo Earthquake Fault Zone.' " (United States Department of the Interior, National Park Service, Golden Gate National Recreation Area)

Response: In response to this comment, DEIR page IV.H-17, paragraph 2 has been revised:

> **Harry W. Tracy WTP.** Based on the geotechnical investigation conducted at this site in 1990 (AGS, 1990), it was determined that the WTP is located within an Alquist-Priolo Earthquake Fault Zone. However, the evidence suggests that this extension of the San Andreas fault, the Serra fault, is not active. Therefore, the potential for seismic ground rupture would be considered less than significant.

L. HAZARDOUS MATERIALS

Comment L-1: "**Hazardous Materials.** The proposed project will make the Pulgas dechloramination facility a significant storage and handling facility for a large quantity of chemicals. The building will store up to approximately 90,000 gallons of chemicals. In addition, hazardous materials will be transferred through underground pipelines adjacent to drinking water. Currently there are no chemicals at the Pulgas site and no mitigation measures are identified for hazardous materials. It is imperative that the emergency plans and worker training requirements in the EIR be implemented to the fullest degree." (United States Department of the Interior, National Park Service, Golden Gate National Recreation Area)

Response: As stated on DEIR page IV.I-19, a hazardous materials business plan would be prepared for the proposed dechloramination facility at the Pulgas site. The plan would include employee training requirements and site-specific emergency procedures to be followed in the event of a chemical release. General SFPUC emergency procedures and employee training requirements are described on DEIR pages IV.I-14 and IV.I-15. Pulgas dechloramination facility personnel would be trained to adhere to SFPUC policies and procedures and to the requirements of the hazardous materials business plan.

M. TRANSPORTATION

Comment M-1: "Transportation. The discussion of transportation does not include the potential for traffic disruption from spills or accidents involving trucks delivering chemicals to the dechloramination facility. According to the table on page IV.I5-6, there is a possibility of 4 to 26 deliveries of chemicals every two weeks, or possibly 104 to 676 deliveries per year. This is a significant change from the current no deliveries and should be addressed in the EIR." (United States Department of the Interior, National Park Service, Golden Gate National Recreation Area)

Response: The commenter overestimates the potential number of chemical deliveries that would occur annually at the Pulgas site by including the maximum number of deliveries on a weekly basis for an entire year. The maximum number of weekly deliveries would not be required for every week of any given year, and the actual range of annual deliveries would be much lower than the upper end of the range stated in Comment M-1.

Traffic and safety impacts associated with the projected operational chemical deliveries are discussed on DEIR pages IV.J-9 and IV.J-10. As noted on DEIR page IV.J-9, operation of the proposed project would generate two to five chemical deliveries per week under average flow conditions, and 12 to 14 deliveries under maximum flows (which occur three to four months out of the year, typically during summer months). Such delivery rates would generate an average of one off-site truck round-trip per day under average flow conditions, and up to three off-site truck round-trips per day under maximum flows. It is estimated that a maximum of less than 415 chemical deliveries would be generated per year at the Pulgas site.

Such increases in traffic relative to background traffic volumes are small and are not expected to significantly increase the potential for accidents in the study area; therefore, these increases would not result in significant traffic disruption from spills or accidents. The SFPUC would schedule chemical deliveries to occur on Monday through Saturday only (except in emergency situations), thereby avoiding potential conflicts with the Bike Sunday program. Improvement measures described in Section V.N of the Draft EIR to coordinate with San Mateo County for potential emergency chemical deliveries that occur on Sundays would further reduce potential conflicts with recreational traffic.

N. AIR QUALITY, UTILITIES, AND SERVICES

Comment N-1: "1. The California Integrated Waste Management Act of 1989 (AB 939) requires each jurisdiction to divert at least 50 percent of solid waste from landfills by the year 2000. Construction and demolition debris constitute a major portion of the disposed materials at a landfill. Neither the Initial Study nor the Draft EIR discuss solid waste disposal of the construction and demolition debris that will be generated from the construction activities on each site and what programs will be proposed to divert the disposal at any landfill in order to meet the spirit of AB 939." (County of San Mateo)

Response: The proposed project would generate minimal construction debris. The only demolition activity proposed would be one outbuilding at the Tesla site, which would generate less than 50 cubic yards of demolition material. At all other project sites, proposed construction would occur on currently vacant, unpaved land, and there would be minimal roadway asphalt removal, if any, or construction debris requiring disposal at a landfill. Therefore, potential solid waste impacts to regional landfill capacity would be less than significant and no mitigation is required.

Comment N-2: "**Air Quality and Utilities and Public Services.** Air Quality and Utilities and Public Services are not analyzed in Chapter 4 (Environmental Setting and Impacts), and yet there are mitigation measures for each in Chapter 5. The EIR does not describe the immediate or regional setting, provide schematics to evaluate potential impacts, or discuss local air quality district requirements. CEQA states a draft EIR 'must include a description of the environment in the vicinity of the project, as it exists before the commencement of the project, from both a local and a regional perspective.' (CEQA Guidelines § 15125)

The final EIR should include a discussion of both resource areas." (United States Department of the Interior, National Park Service, Golden Gate National Recreation Area)

Response: As stated on Draft EIR pages V-18 through V-19, the mitigation measures presented in the EIR for Air Quality and for Utilities and Public Services refer to the analyses conducted in the Initial Study, which is included as DEIR Appendix A. The commentor is referred to Appendix A for the assessment of Air Quality and Utilities and Public Services impacts. Chapter V of the DEIR provides a consolidated list of all mitigation measures identified for the proposed project.

O. MITIGATION MEASURES

Comment O-1: "**Mitigation Measures.** The purpose of the 'Mitigation Measures Identified in this Report' is unclear. The measures 'are not included in the project, but could reasonably be expected to reduce the adverse impacts of the project if required as conditions of approving the project (page V-1).' Please clarify the nature of these mitigation measures. The minimum commitment of mitigation measures in the EIR is 18 of the 55 identified. The criteria for selection and the decision-makers should be identified and the EIR should discuss the benefits and disadvantages of choosing one mitigation measure over another." (United States Department of the Interior, National Park Service, Golden Gate National Recreation Area)

Response: California Environmental Quality Act (CEQA) Guidelines Section 15126.4 requires that an EIR describe feasible measures that could minimize significant adverse impacts. Further, the EIR must distinguish between measures proposed by the project proponents to be included in the project and those measures proposed by the lead, responsible, or trustee agency, which are not included but could reasonably be expected to reduce the adverse impacts if required as conditions of approving the project (listed in the DEIR as "Measures Identified in this Report"). Mitigation measures identified in the EIR are available for the SFPUC to adopt, but the EIR does not determine which measures are to be adopted. If the project is approved by the SFPUC, the SFPUC would, at the time of project approval, adopt CEQA findings that make the determination as to whether to adopt mitigation measures identified in the EIR and implement the measures as conditions of approval for the project. Mitigation measures can be rejected if specific findings of infeasibility are made. In such a case, a statement of overriding considerations, finding that the benefits of the proposed project outweigh the unavoidable adverse environmental effects, would be required.

P. ALTERNATIVES

Comment P-1: "A draft EIR must describe a range of reasonable alternatives to the proposed project, or to its location, that could feasibly attain the project's basic objectives, and must evaluate the comparative merits of each alternative. The discussion must focus on alternatives capable of either eliminating any significant adverse environmental effects or reducing them to a level of insignificance, even if such alternatives would be more costly or would impede to some degree the project's objectives. If the lead agency prefers the project alternatives, the EIR must explain why the agency chooses to reject other alternatives, if considered in developing the proposal. If an agency finds certain alternatives to be infeasible, its analysis must explain in meaningful detail the reasons and facts supporting that conclusion.

Page VII-1 states that Chapter VII will discuss 'Facility Siting and Design Alternatives.' Although there is a discussion of facility siting, the chapter does not present design alternatives for the Pulgas dechloramination facility. There is not an analysis of reducing the square footage requirements of the dechloramination building, associated piping, or contactor basin. There is not an analysis of constructing the decloramination building below grade to reduce the visual impacts." (United States Department of the Interior, National Park Service, Golden Gate National Recreation Area)

Comment P-2: "**Alternatives-Pulgas Site.** Serious consideration should be given to locating the dechloramination facility in a less sensitive area, avoiding the wetland, riparian habitat, and special status species impacts. The discussion of Other Facility Siting Alternatives Considered (Section VII-E.3.0) dismisses the site east of Cañada Rd on the basis of recreation and potential cost considerations. However, moving the site to the east could keep it out of the scenic corridor and the fault zone. The engineering analysis used for site selection should be presented in more detail." (United States Department of the Interior, National Park Service, Golden Gate National Recreation Area)

Comment P-3: "Address the possibility of colocating the pipelines where they cross the unnamed drainage to reduce impacts to sensitive species." (United States Department of the Interior, National Park Service, Golden Gate National Recreation Area)

Response: Draft EIR Chapter VII presents a discussion and assessment of a reasonable range of alternatives to the proposed project that would feasibly attain most of the basic objectives of the project. Due to the strict regulatory requirements stipulated by the Stage 1 Disinfectants and Disinfection By-Products Rule and the geographic restrictions based on the location of existing facilities, there was a limited range of reasonable alternatives that could meet the project objectives. A number of alternatives and subalternatives were eliminated from further consideration because they would either not achieve the project objective or would result in greater environmental effects than the proposed project.

At the Pulgas site, the alternative location for the dechloramination facility east of Cañada Road would not achieve the project objective of improving the reliability of the water supply system. Due to topographic constraints, any facility at this location would require pumping water both to

and from the dechloramination facility. Pumping would reduce the reliability and efficiency by increasing the complexity of the system, so this alternative site location was eliminated from further consideration. In a pumped system, pump failure (due to mechanical problems, power outages, etc.) would not allow chloraminated flow to be diverted to the dechloramination facility for treatment, thus resulting in the discharge of chloraminated water to Crystal Springs Reservoir. The proposed project is a gravity system, which would provide for greater system reliability and therefore greater environmental protection.

Also at the Pulgas site, the suggestion to co-locate the two pipelines to and from the dechloramination facility in the same trench across the drainage channel instead of in two trenches would result in greater environmental effects than the project as proposed. If the two pipelines were located in one trench, it would require a wider and deeper trench across the drainage channel. With two trenches, it is proposed that the outflow pipeline be located in the existing gravel road to reduce impacts to the drainage channel and associated vegetation, and only the inflow pipeline would cross the drainage channel. Therefore, this option to co-locate the two pipelines in the same trench was eliminated from further consideration.

With mitigation measures identified in the EIR, implementation of the project would not result in unavoidable adverse impacts. Because the primary purpose of alternatives identification and analysis is to avoid or reduce a project's significant impacts, the EIR's discussion of alternatives is considered adequate and appropriate.

Q. GENERAL

Comment Q-1: "City of Sunnyvale staff reviewed the report for potential impacts on our water and wastewater systems. Based on the information presented in the Draft EIR, we do not have any specific comments on the project at this time." (City of Sunnyvale)

Comment Q-2: "Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the above referenced project. We have examined the DEIR and are satisfied with the document." (Department of Transportation)

Response: These comments are noted.

CHAPTER III
STAFF-INITIATED TEXT CHANGES

The following corrections and/or clarifications have been made to the EIR text, in addition to those changes listed in Chapter II of this document. These corrections include: minor corrections made by the EIR authors to improve clarity, grammar, and consistency; or staff-initiated text changes to update information presented in the DEIR. The text revisions are organized by the chapter and page number that appear in the DEIR. Deleted text, shown as "~~deleted text~~," presented in this section indicates text that has been deleted from the EIR. Text that has been added to this EIR is presented as **bold**.

DEIR pages IV.C-19 through IV.C-21, section entitled "Pulgas Site":

> ***Pulgas Site***
>
> **The description of special-status species in the Pulgas site area encompasses the dechloramination facility and contactor basin area, the contactor pipeline routes leading to the dechloramination facility and from the contractor basin, and areas to the west and northwest of project facilities (see Figure IV.C-1).**
>
> Most of the special-status plants considered in Appendix C (e.g., Marin dwarf flax [*Hesperolinon congestum*] and San Mateo thorn-mint [*Acanthomintha duttonii*]) that occur within the Peninsula Watershed require certain habitat conditions **that are not present at the Pulgas site**, such as serpentine soils, areas of low disturbance, or the presence of other plant species. Other species (e.g., San Francisco wallflower [*Erysimum franciscanum*] and Dudley's lousewort [*Pedicularia dudleyi*]) favor areas subject to disturbance events such as burns or mowing. Disking and other routine maintenance activities at the Pulgas site have caused disturbance that exceeds the requirements of species such as San Francisco wallflower and Dudley's lousewort. For this reason, no special-status plants are likely to occur at this site.
>
> **Many nesting passerine bird species (protected by the Migratory Bird Treaty Act) and possibly nesting raptors (protected by the Migratory Bird Treaty Act and CDFG Code 3503.5) are expected at the Pulgas site during the nesting season (approximately March 1 through August 15).**
>
> **Special-status species are described below for the following locations: the proposed dechloramination facility and contactor basin site, the contactor pipeline routes, and adjacent areas. No other potential special-status wildlife species were identified for the Pulgas site.**

Pulgas Dechloramination Facility and Contactor Basin. ~~The Pulgas site~~**This area** consists of annual grasslands, with woodland habitat located to the north and east. The grasslands in this area contain few small mammal burrows (only pocket gopher burrows were noted) and little plant or wildlife diversity. No debris, snags, woodpiles, rockpiles, slash, or other types of cover were observed on this site. Based on these findings, the grasslands portion of the ~~site~~**Pulgas dechloramination facility and contactor basin area** does not appear to provide suitable habitat for San Francisco garter snake (*Thamnophis sirtalis tetrataenia*) or California red-legged frog (*Rana aurora draytonii*),~~.~~ **the primary species of concern in the project region, although such a determination must be made with caution considering the known presence of the species in the area.**

Contactor Pipeline Routes. The proposed pipeline route between the Pulgas Water Temple and the proposed **dechloramination** facility site would cross an unnamed drainage that does provide potential San Francisco garter snake and California red-legged frog habitat **(see Figure IV.C-1)**. A 4-foot by 3-foot pool suitable for California red-legged frog breeding was observed downstream from the proposed crossing area. It is anticipated that the associated oak woodland riparian habitat in this waterway could provide upland refugia for this species as well. The presence of aquatic habitat and suitable forage species suggests possible habitat for San Francisco garter snake, but habitat for this species is considered marginal compared with downstream areas because of the narrow width of the riparian corridor.

Protected nesting birds, including several raptor species (e.g., northern harrier and red-tailed hawk), are expected to use the riparian woodlands north of the site during the breeding season.

The area surrounding the Pulgas ~~site~~**Water Temple** consists of ornamental plants and is regularly maintained. None of the special-status plant species considered in Appendix C are expected in this area. The location of proposed **pipeline** construction at the Pulgas ~~site~~**Water Temple** includes both disturbed and landscaped areas, as well as upland wooded habitat **to the south of the temple**. The Pulgas ~~site~~**Water Temple area** does not provide year-around habitat for the federal and state endangered San Francisco garter snake or the federal threatened California red-legged frog, the primary species of concern in the project region, although such a determination must be made with caution considering the known presence of the species in the area.

Adjacent Areas. Known breeding habitat for the California red-legged frog occurs ~~within 1,000 feet of~~**at Laguna Creek, which is located west of the Pulgas site area** ~~the southwestern site boundary~~, and potential upland refugia habitat occurs throughout the **Pulgas site** area (ESA, 1999). Potential upland aestivation habitat and basking areas for San Francisco garter snake occur in the marshy willow riparian habitats southwest of the overflow channel ~~on the project site~~. The willow thickets have a nearly impenetrable shrub layer consisting of poison oak and California

blackberry. The ground in the willow thicket appears to be persistently moist, though standing water was not observed during the fall site visits.

In November 1998, ESA biologists observed a mature California red-legged frog 200-300 feet from Laguna Creek on the south side of the access road. Laguna Creek is a minor tributary drainage to Upper Crystal Springs Reservoir. The mature individual was in upland habitat, under a madrone shrub. A California red-sided garter snake, a subspecies of the common garter snake with similar habitat requirements as the San Francisco garter snake, was observed roughly 150 feet southwest of the overflow channel. This species was detected in a small opening in the willow canopy that allowed for basking. Though habitat has been poorly described for the San Francisco garter snake, based upon the described propensity of the snake and California red-legged frog to use adjacent upland habitats (USFWS, 1985; 1996; Jennings and Hayes, 1994), all identified willow riparian habitats in the Pulgas site **area** region are considered to meet habitat suitability standards for California red-legged frog and San Francisco garter snake.

Upland habitat value for San Francisco garter snake and California red-legged frog depends principally upon the proximity to seasonal or perennial aquatic habitats; the availability of cover such as dense vegetation, leaf litter, or slash piles; and the availability of suitable food sources. Suitable habitat in the project area may include willow riparian habitat, grasslands, and wooded areas. Moderate- to high-quality upland habitat for San Francisco garter snake and California red-legged frog was identified in uplands and willow riparian habitats near the Pulgas site. Potential habitat was noted both south and west of the overflow channel~~-work area~~. ~~The habitat starts near the westernmost 200 feet of channel, roughly 40 feet to the south.~~ The identified willow riparian thicket becomes more dense further to the south and was also noted west of the overflow channel~~-work area~~. Grasslands adjacent to the willows may also provide habitat for San Francisco garter snake and California red-legged frog. Based upon the little known upland distribution preferences of San Francisco garter snake (USFWS, 1985) and close proximity of this ~~site~~**area** to essential breeding habitat, the mixed oak woodlands habitat ~~located southwest of the Pulgas Water Temple~~**along the contactor pipeline routes** should be considered at least marginally suitable for this species. While observed near the site, the California red-legged frog is not expected to use the annual grassland portion of the Pulgas ~~site~~**dechloramination facility, contactor basin, and contactor pipeline areas** because of the generally poor cover ~~this~~**these** areas provide~~s~~, but is presumed to be present seasonally in all other areas.

The willow riparian habitat also provides potential breeding habitat for the saltmarsh common yellowthroat, a federal and state species of concern. Breeding yellowthroat populations were identified in willow habitats near Upper Crystal Springs Reservoir within 600 feet of the proposed overflow channel area (CNDDB, 1999); however, willow thickets also occur within 50 feet of the proposed channel~~-work area~~.

~~Many nesting passerine bird species (protected by the Migratory Bird Treaty Act) and possibly nesting raptors (protected by the Migratory Bird Treaty Act and CDFG Code 3503.5) are expected at the Pulgas site during the nesting season (approximately March 1 through August 15).~~

~~No other potential special-status wildlife species were identified for the Pulgas site.~~

DEIR page IV.C-25, paragraph 2:

An unnamed creek occurs on the northwestern perimeter of this site (**see Figure IV.C-1**). Arroyo willow is the dominant species along the creek. Water was observed within the creek during ESA's September visit. Within the project site, the creek riparian corridor is approximately 400 feet long and 100 feet wide. The area of disturbance would be approximately 50 feet by 10 feet of Corps jurisdictional waters. This creek is subject to Corps jurisdiction under Section 404 of the Clean Water Act and CDFG regulations.

DEIR page IV.C-32, paragraph 4:

Vegetation Community Impacts

The CDFG has jurisdiction over vegetation removal within significant plant communities, such as willow riparian habitat. Thus, the removal of willow riparian vegetation at the Pulgas site would be subject to CDFG regulation. The approximate acreage of willow riparian habitat types is 500 square feet of combined coast live oak woodland and willow riparian habitat (**see Figure IV.C-1**). The removal of willow riparian habitat constitutes a substantial, adverse change in the physical conditions within the project area (CEQA Section 15382) and therefore would be considered a significant impact. However, mitigation measures listed in Section V.C to provide replacement habitat and to implement a revegetation plan would reduce the impact to less than significant.

DEIR page IV.D-16, paragraph 2:

To determine if the proposed project would result in ammonia toxicity in surface waters, a worst-case condition was analyzed to calculate the concentration of un-ionized ammonia that could be discharged to surface waters. The proposed project is designed such that the maximum concentration of total ammonia in the SFPUC water supply would be 0.50 mg/L (SFPUC, 1999). At **Upper** Crystal Springs Reservoir, the pH ranges from about ~~7~~6.5 to 8.5~~0~~, and the temperature ranges from about 10° C (degrees Celsius) to 24~~0~~° C; under these conditions, the maximum concentration of the toxic form of ammonia in the chloraminated water would be approximately 0.07~~2~~ mg/L, well below the Basin Plan objective of 0.40 mg/L that applies to the receiving waters in the project area. The pH of the discharge would be maintained at a level less than 8.0 as part of the dechloramination process, which would also

maintain the ammonia in the discharge below toxic levels. Even with a pH level of 9.0 in the discharge water, the maximum level of un-ionized ammonia would be 0.14 mg/L as N (at 20°C) and would still be below the toxic level for receiving water. Under normal operating conditions, total ammonia levels would be reduced below 0.50 mg/L in the dechloramination process, and un-ionized ammonia levels would be even less than described above. Therefore, toxic ammonia conditions would not occur under normal operating conditions or even under system upset conditions.

DEIR page IV.I-3, paragraph 5:

PCBs were manufactured in the United States between 1929 and 1977 for such uses as electrical transformers and capacitors and fluorescent light ballasts (~~Allegri, 1986~~**Harte, 1991**). PCBs are highly toxic, persist in the environment, accumulate in biological systems, interfere with reproduction, and act as an immunosuppressant. Under the Toxic Substances Control Act of 1978, the manufacture, processing, and commercial distribution or use of any PCB was prohibited, except when contained in a totally enclosed manner. The manufacture of PCBs and the distribution of PCBs in commerce were banned in 1979. However, utilities and other owners of PCB-filled electric transformers and capacitors were allowed to maintain the equipment for its working life, if it did not leak. The USEPA Spill Cleanup Policy dictates that spills of materials containing PCBs at concentrations of 50 parts per million (ppm) or greater be cleaned up within 48 hours. If a transformer has leaked, the oil is tested to determine PCB levels and subsequent cleanup requirements.

DEIR page IV.I-4, paragraph 2:

New transformers (installed after 1983) contain a nameplate that specifies the PCB content level, which is less than 1 ppm. If an individual wants to have a transformer tested, there is a charge for the test, which varies based on the size of the shutdown and the size of the transformer. If the transformer exceeds a PCB concentration of 50 ppm, the fee is refunded (~~Allegri, 1986~~**Harte, 1991**).

DEIR pages IV.I-16 and IV.I-17, References – Hazardous Materials:

REFERENCES – Hazardous Materials

~~Allegri, Theodore H., Sr., *Handling and Management of Hazardous Materials and Waste*, Chapman and Hall, 1986.~~

California Environmental Protection Agency (Cal-EPA), Department of Toxic Substances Control, *Lighting Wastes*, 1992.

Harte, John; Holdren, Cheryl; Schneider, Richard; and Shirley, Christine; *Toxics A to Z, A Guide to Everyday Pollution Hazards*, University of California Press, 1991.

San Francisco Public Utilities Commission (SFPUC), Tesla Portal Hypochlorite Station, *Hazardous Materials Business Plan*, 1997a.

San Francisco Public Utilities Commission, San Antonio Pump Station, *Hazardous Materials Business Plan*, 1997b.

San Francisco Public Utilities Commission, Harry W. Tracy Water Treatment Plant, *Hazardous Materials Business Plan*, 1999.

U.S. Environmental Protection Agency (USEPA), Note to Hank Habicht regarding Disposal of PCB-Containing Fluorescent Light Ballasts, 1992.

Vista Information Solutions, Site Assessment Plus Report, Tesla Portal, 1999a.

Vista Information Solutions, Site Assessment Plus Report, San Antonio Pump Station, 1999b.

Vista Information Solutions, Site Assessment Plus Report, Pulgas Water Temple, 1999c.

Vista Information Solutions, Site Assessment Plus Report, Harry W, Tracy WTP, 1999d.

DEIR page V-15, section entitled "Operational Impacts to Architectural Resources":

Operational Impacts to Architectural Resources

The following measure addresses potential cultural resource impacts at the Pulgas Water Temple associated with project operation:

G-43 The SFPUC shall, as part of the project, maintain as much of the existing sound and appearance of rushing water through the Pulgas Water Temple as is feasible, given operational requirements of the water system. The pattern, amounts, appearance, and sounds of the current flow regime shall be documented to establish existing baseline conditions, and a system shall be incorporated into the project (such as a system that pumps water through the temple) to simulate the existing conditions. It is expressly understood that, currently, flows vary from none to considerable, depending on operational requirements of the overall system. All alterations to the temple shall be performed in accordance with applicable Secretary of the Interior's *Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings* (Weeks and Grimmer, 1995).

Implementation of Mitigation Measure G-43 would reduce potential operational impacts to the Pulgas Water Temple to a less than significant level.

Draft EIR page VII-5, paragraph 4:

> Table VII-2 compares the impacts on biological resources under Siting Alternative 1 to impacts under the proposed project and Siting Alternative 2. **While Figure III.C-1 indicates the general location of Alternative 1 biological resources, a~~A~~** detailed impact analysis for Siting Alternative 1 is provided in the *Biological Resources Background Report* prepared for this EIR (Environmental Science Associates, 2000). As under the proposed project, facility construction under this alternative could result in significant direct and indirect impacts on individual California red-legged frogs and San Francisco garter snakes as well as their habitats. Siting Alternative 1 is within 300 feet of breeding habitat for these two species, which is closer than the proposed project site.

Draft EIR page VII-8, paragraph 2:

> Table VII-2 compares the impacts on biological resources under this alternative to impacts under Siting Alternative 1 and the proposed project. **While Figure III.C-1 indicates the general location of Alternative 1 biological resources, a~~A~~** detailed impact analysis for Siting Alternative 2 is included in the *Biological Resources Background Report* prepared for this EIR (Environmental Science Associates, 2000). As under the proposed project, facility construction under this alternative could result in significant direct and indirect impacts on individual California red-legged frogs and San Francisco garter snakes as well as their habitats. Siting Alternative 2 is within 300 feet of California red-legged frog and San Francisco garter snake breeding habitat, similar to Siting Alternative 1, but closer than the proposed project site.